April 9, 1956

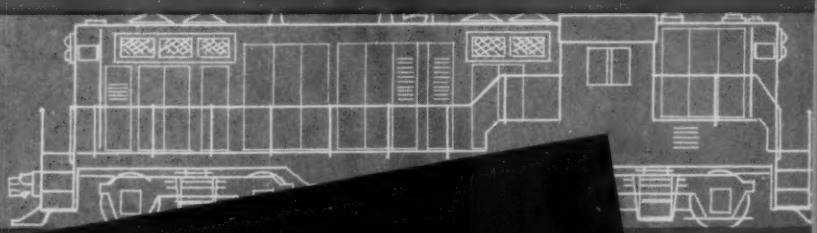
Does Your Pay Match Your Job?... p. 26

RAILWAY AGE

WORKBOOK OF THE RAILWAYS

THE INDUSTRY'S ONLY WEEKLY NEWSMAGAZINE

NEW LOCOMOTIVES FOR OLD



. . . through Electro-Motive's remanufacturing program that enables high-mileage Diesels to be brought up to today's production standards.

At less than half the cost of a new unit, you receive a factory-warranted upgraded locomotive with increased horsepower and higher tonnage rating. Contact your nearest Electro-Motive representative.

ELECTRO-MOTIVE DIVISION · GENERAL MOTORS

La Grange, Illinois • *Home of the Diesel Locomotive* • In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

GENERAL MOTORS LOCOMOTIVES

CAT* DW21s

CARVE OUT A NEW SWITCHYARD FOR SEABOARD

To build a new switchyard near Quincy, Fla., for Seaboard Railroad, 250,000 yards of earth had to be moved. Less than four months after the job started, two Caterpillar DW21s and scrapers had moved more that half that total. *Each unit averaged 108 yards per hour over a one-mile round-trip haul!*

Today you can expect even greater production. For the capacity of these fast-stepping units has been increased. The new DW21 (Series C) and its No. 470 Scraper with exclusive LOWBOWL design give you a capacity of 25 cubic yards heaped.

And the power of the new DW21 has been increased to 300 HP maximum output at 1800 RPM, giving you a full 10 per cent greater rimpull. A new Turbocharger, driven by engine exhaust, utilizes energy which would otherwise be lost, delivering more working HP and greater performance. The unit is capable of speeds up to 20.5 MPH for fast hauls.

The secret of this new scraper's production ability is LOWBOWL design. The bowl has been widened and lengthened, yet bowl depth has been decreased. But LOWBOWL design is more than just dimensional changes. Tests demonstrate that material is loaded with less resistance clear to the end of the loading cycle.

On the Kansas Turnpike, this new Cat rig was put to work side by side with other makes under exactly the same conditions. *The big yellow unit moved up to 37 per cent more material. It had an advantage of 15 per cent over the next best unit,* the Cat DW21 and No. 21 Scraper which it replaced.

It's time to see your Caterpillar Dealer for the full story. You'll start increasing production, cutting costs, the minute you put this unit to work on *your* job.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

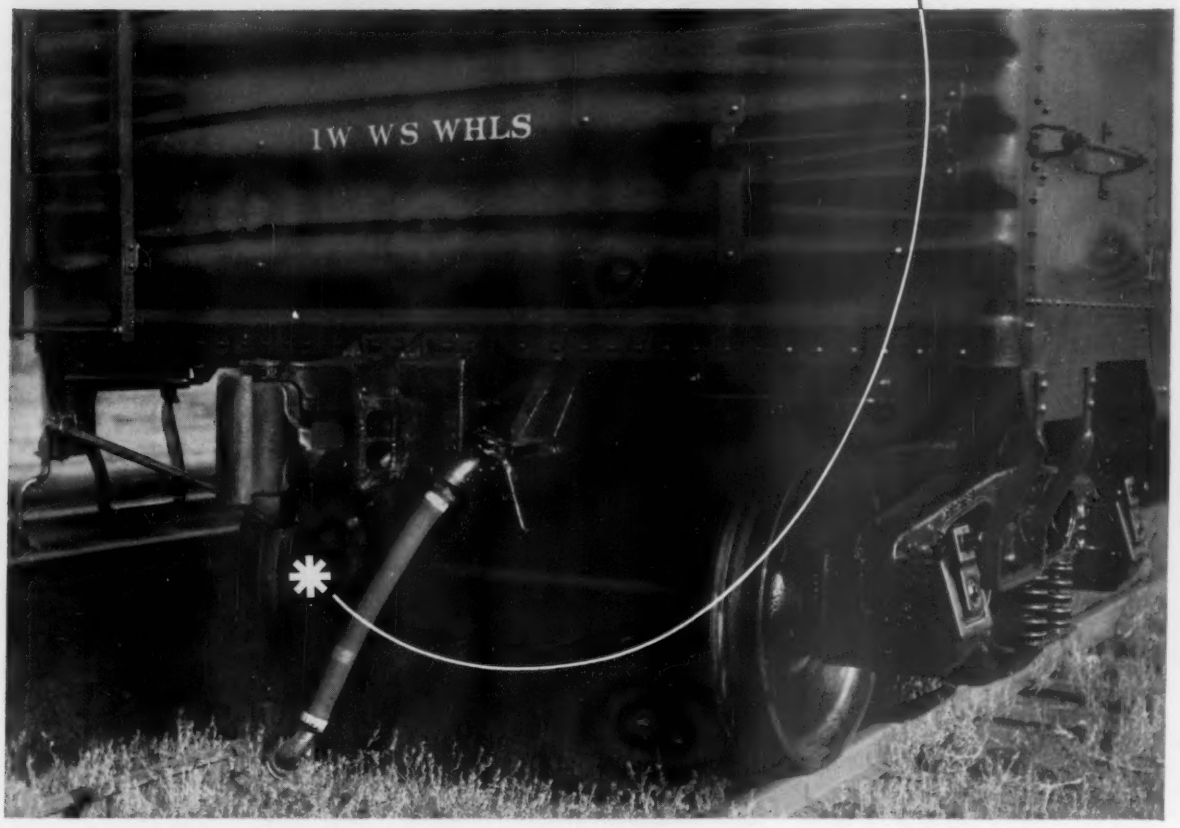
CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co

NAME THE DATE... YOUR DEALER WILL DEMONSTRATE

For Proof of Wheel Service

Look Under Your Cars



Permanently stamped on the back of the rim of each Armco One-Wear Wrought Steel Wheel is the date the wheel was made. See for yourself how long and well these wheels have served. *Just look under your cars.*

Rugged wrought steel wheels can't be beat for miles of service per dollar because they have the wear-resistance and toughness possible *only* in a forged and rolled wheel. This extra durability means more car miles, faster freight schedules, more satisfied shippers.

For complete information about Armco Wrought Steel Wheels, just contact our nearest Sales Office or write us at the address below.

Plan Now to Attend the AAR Purchases and Stores Division Meeting in St. Louis, May 16-17-18.

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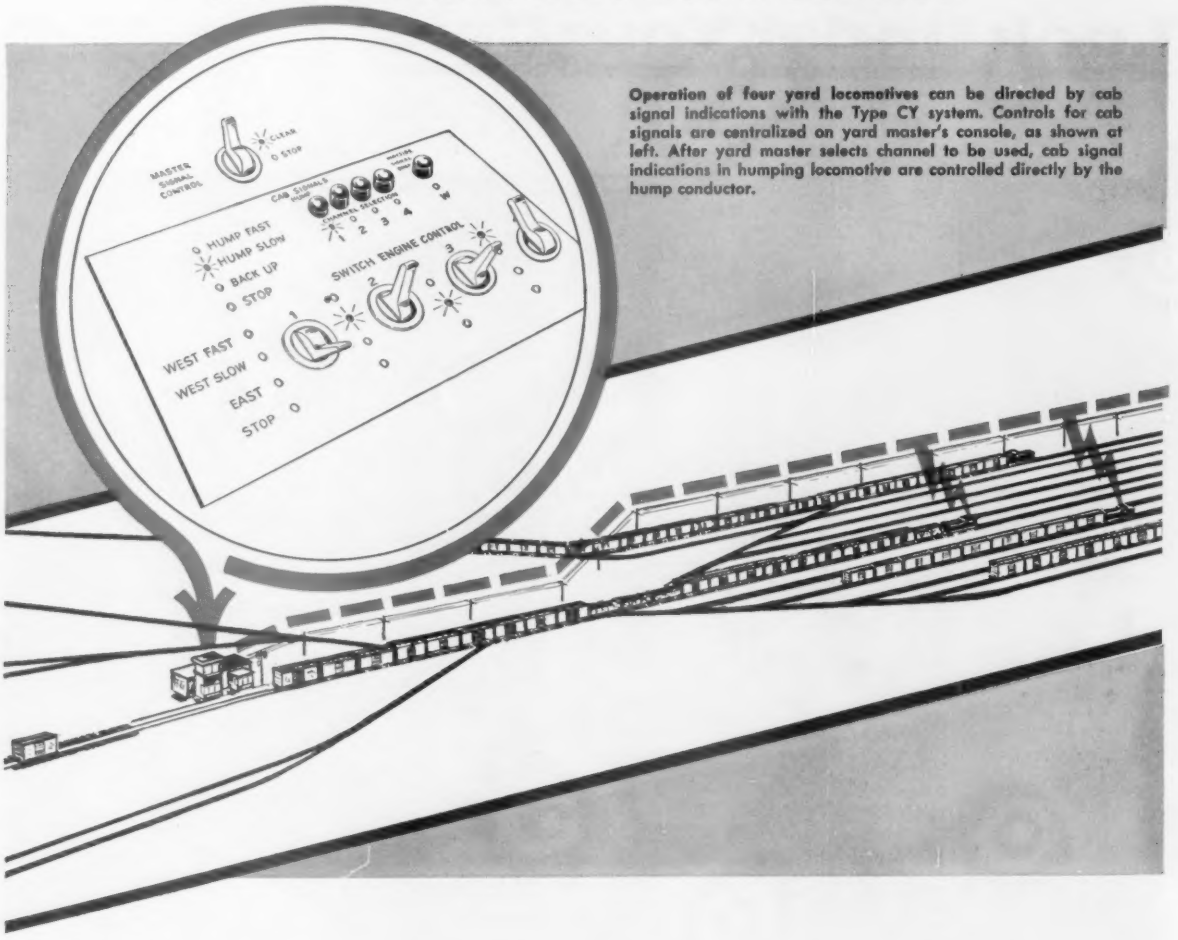
SHEFFIELD STEEL DIVISION • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

UNION Type CY
INDUCTIVE CAB SIGNAL SYSTEM
for Classification Yard Service



Operation of four yard locomotives can be directed by cab signal indications with the Type CY system. Controls for cab signals are centralized on yard master's console, as shown at left. After yard master selects channel to be used, cab signal indications in humping locomotive are controlled directly by the hump conductor.

Now, continuous control of humping movements is possible with the new UNION Type CY Inductive Cab Signal System designed especially for classification yard service. This new system puts a visual signal in the cab where it can always be seen and provides an audible annunciation of signal changes. This visual–audible signal combination in the cab keeps enginemen constantly alerted to humping instructions.

Using thoroughly proved inductive principles, this new UNION System can transmit any of four signal indications . . . hump-fast, hump-slow, back-up, or stop . . . to each humping locomotive. Each change in signal is announced in the cab by the ringing of a single-stroke bell. Up to four locomotives can be controlled simultaneously yet independently over a single carrier frequency.

Results? Faster, safer car handling through constant instantaneous control of humping speeds . . . and regardless of fog, smoke, curved track or other adverse visibility conditions.

Call or write our nearest district office for complete information.

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DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

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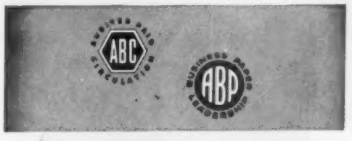
Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn. James G. Lyne, president. Arthur J. McGinnis, executive vice-president and treasurer. J. S. Crane, vice-president and secretary.



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Workbook of the Railways

Vol. 140, No. 15
April 9, 1956

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Week at a Glance

This could be a record year . . .

. . . The forecast of carloading for this year's second quarter, just announced by the National Association of Shippers Advisory Boards, indicates the period may be the best three months since July-September 1953 and the biggest spring since 1952. . . . p.7

FORUM: Fervor plus good cars . . .

. . . is the prescription for one of the railroads' enduring woes—lading loss and damage. . . . p.25

Why not useful car numbers? . . .

. . . They can tell railroad men and shippers the type and character of equipment and a little trouble in setting up the system should pay off in less waste in car handling. . . . p.25

Does your pay match your job? . . .

. . . How executive salary administration, based on systematic job classification, helps employee relations and strengthens organizational structure. . . . p.26

What one big yard will do . . .

. . . Here's a case where an investment of $10 million plus will bring in an annual return of 72% for the railroad and save shippers 225,000 car-days a year. . . . p.30

Here's a fiber-glass pole . . .

. . . and some of its cost-offsetting advantages are these — light weight, high strength, long life, and woodpecker resistance. . . . p.33

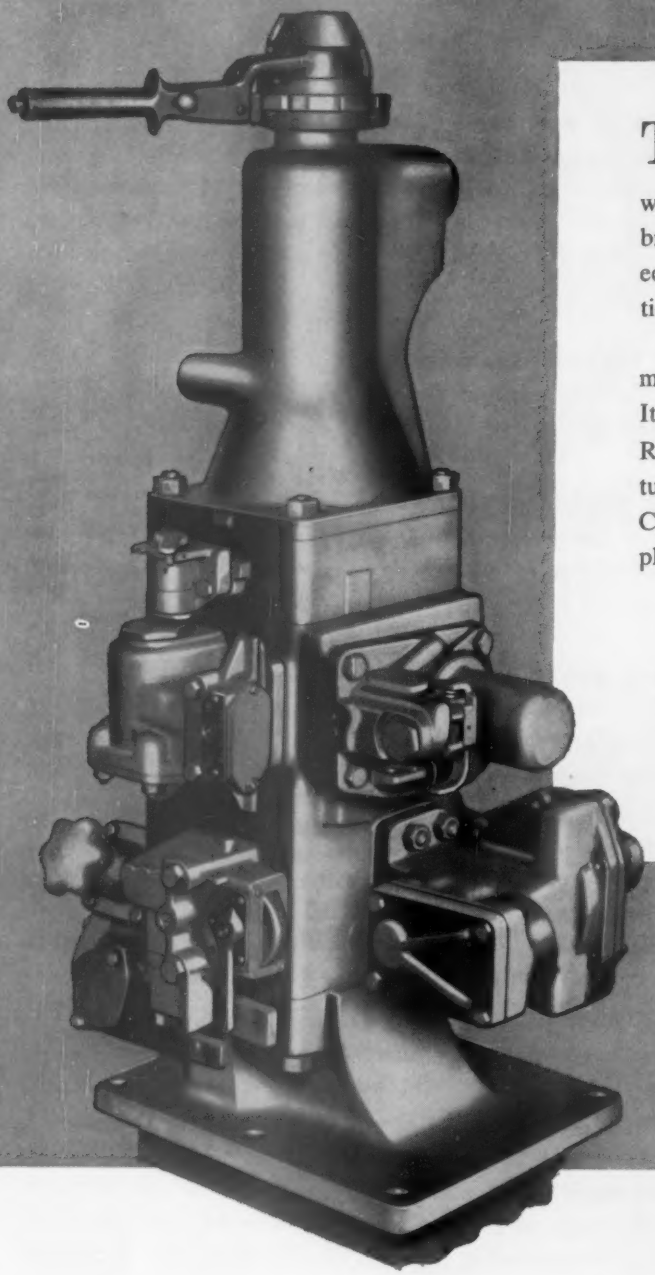
Suppliers now active allies . . .

. . . under aegis of Railway Progress Institute, they are striding ahead championing railroad advancement. . . . p.34

Railroading after hours . . .

. . . that's the title of Editor James G. Lyne's new personal column, going beyond the scope of the popular "Benchmarks and Yardsticks." . . . p.36

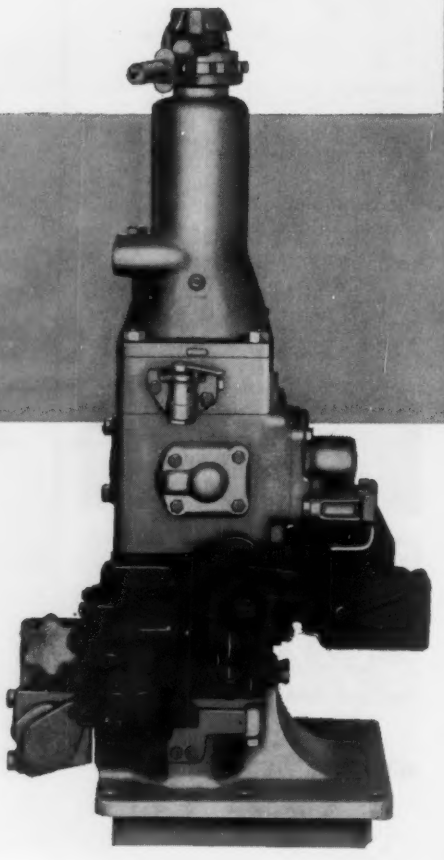
NEW DS-24-M BRAKE VALVE for 24 RL Road Locomotive Brake



THIS type brake valve incorporates the brake pipe pressure maintaining feature which offers *pronounced improvement* in train brake operation plus *outstanding maintenance* economies arising from more uniform distribution of braking throughout the train.

The D-24-M Brake Valve is the recommended standard for 24 RL Brake Equipment. Its functions can be readily incorporated in 24 RL Brake Valves now in service by substituting a conversion filling piece. Write for our Circular Notice No. 1130 which gives complete details.

Conversion Filling Piece, shown in color below, for existing D-24 Type Brake Valves. It provides all the brake pipe pressure maintaining features of the DS-24-M Brake Valve.



Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION WILMERDING, PENNA.

Current Statistics

Operating revenues, one month	
1956	$831,622,598
1955	752,487,353
Operating expenses, one month	
1956	$661,410,900
1955	589,237,148
Taxes, one month	
1956	$85,254,760
1955	74,617,307
Net railway operating income, one month	
1956	$62,877,376
1955	68,899,131
Net income, estimated, one month	
1956	$46,000,000
1955	52,000,000
Average price 20 railroad stocks	
April 3, 1956	105.89
April 5, 1955	91.41
Carloadings revenue freight	
Twelve weeks, 1956	8,255,257
Twelve weeks, 1955	7,661,949
Average daily freight car surplus	
Wk. ended Mar. 31, 1956	3,150
Wk. ended Apr. 2, 1955	26,044
Average daily freight car shortage	
Wk. ended Mar. 31, 1956	5,570
Wk. ended Apr. 2, 1955	1,898
Freight cars on order	
March 1, 1956	141,437
March 1, 1955	18,663
Freight cars delivered	
Two months, 1956	9,080
Two months, 1955	4,430
Average number of railroad employees	
Mid-February 1956	1,041,021
Mid-February 1955	1,005,836

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

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Week at a Glance CONTINUED

Soda pop or pork and beans? . . .

. . . B&O bar cars, which are standard diners made over for cafeteria-style service to troops or excursion parties, are economical and efficient. . . . p.37

20-ft doors speed lumber loading . . .

. . . and a test trip with such a car convinces the Seaboard it has a real man-hour saver for shippers. . . . p.38

BRIEFS

House hearing on cabinet report . . .

. . . House bills to implement recommendations of President Eisenhower's Cabinet Committee on Transport Policy and Organization will get a public hearing beginning April 24. The Subcommittee on Transportation and Communications of the House Committee on Interstate and Foreign Commerce will then receive presentations from all interested parties. At the sessions it held last fall, the subcommittee heard only representatives of affected transportation agencies. The House bills are H.R.6141 and H.R.6142. No date has been set for hearing on the like Senate bill, S.1920.

UP to test coal turbine . . .

. . . Before the end of 1957 the Union Pacific expects to test a coal-burning turbine locomotive, UP President A. E. Stoddard says.

"Selling" U.S. railroad techniques . . .

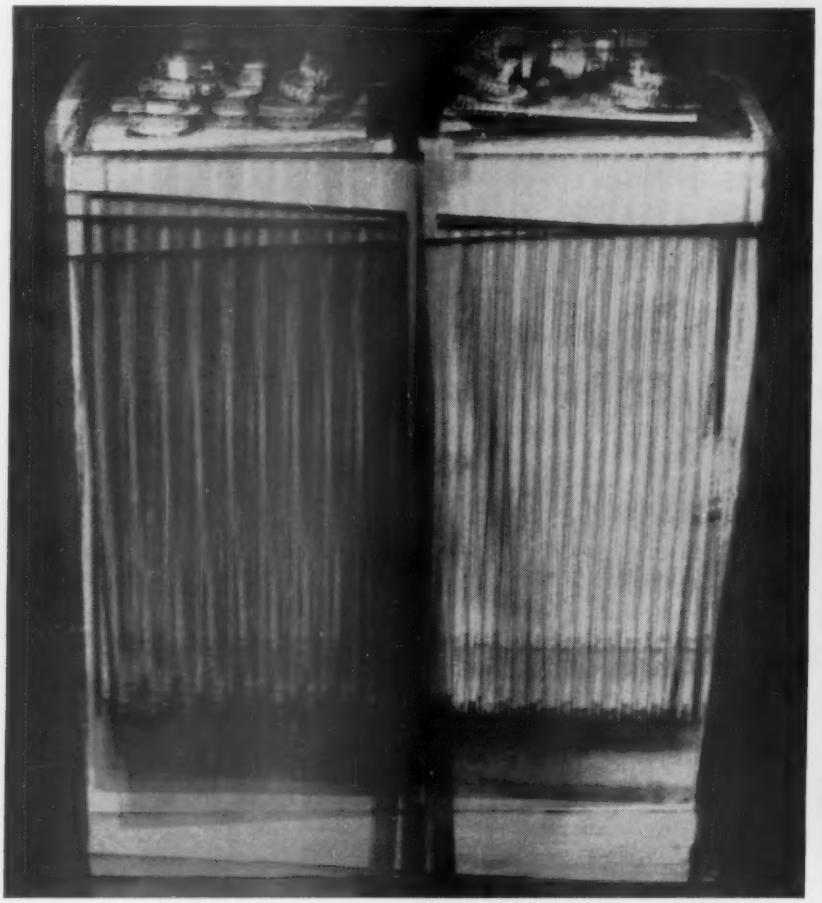
. . . to the Spanish-speaking counties to the South and overseas is the mission of the quarterly Selecciones del Railway Age, first issue of which is now being received by 2,500 readers—railroaders and government officers. Articles appearing in Railway Age and affiliated monthly technical journals are digested therein in Spanish, specifically to meet the desire of Latin American railroaders to learn about North American ways and products.

Passenger problem in a nutshell . . .

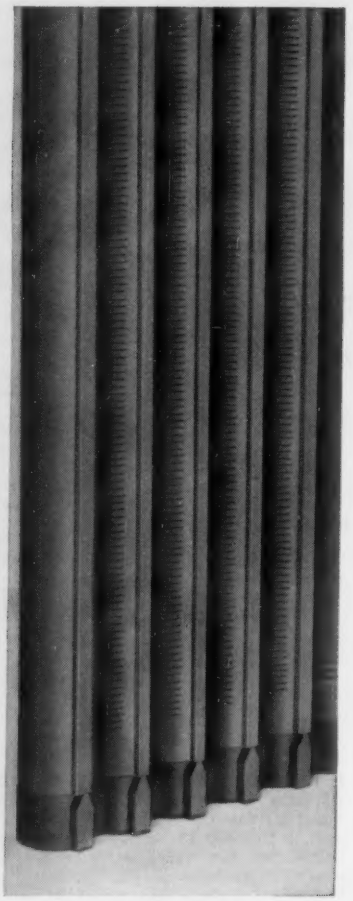
. . . Crux of the passenger problem is put this way by J. B. Jones, vice-president—passenger sales and services of the Pennsylvania. In 1929 this largest railroad passenger carrier in the country had a gross of $186 million. Its gross in 1955 was almost identical, but it produced a net revenue deficit of $34 million—whereas the same gross in 1929 produced a net profit of $40 million.

EXIDE-IRONCLAD BATTERIES

For railway car lighting and air conditioning



Actual photo taken during vibration torture test on an Ironclad Battery



Section of Ironclad positive plate

Vibration can't loosen active material — can't shorten battery life

BATTERY FOR RAILWAY CAR LIGHTING AND AIR CONDITIONING. Model EHL. Write for Bulletin No. 5168.

When a heavy duty storage battery gets the "shake treatment," battery life is literally at the mercy of the bond between the positive grid and the active material. Heavy shedding means short life.

But look what happens in an Exide-Ironclad Battery. Active material is held firmly captive inside the plastic power tubes. Hair-thin slits let electrolyte in, but keep active material from falling out. In prolonged vibration tests, this unique design has proved to be a valuable battery life stretcher. These findings are confirmed in the long, dependable service of Exide-Ironclad Batteries in typical high-vibration applications.

This superior performance is only one of the many extra advantages in Exide-Ironclad Batteries — advantages that have earned them an unmatched reputation for long life and high capacity. When you order heavy duty batteries, or the equipment that requires them, be sure to specify Exide-Ironclad. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide®

This Could Be a Record Year

Shippers Boards forecast for second quarter, backed by views from other sources, indicates continuing rise in rail business—Is it recaptured traffic or part of a national boom?

The best three months since July-September 1953 and the biggest Spring since 1952 is forecast for the railroads by the Shippers Advisory Boards in their carloadings estimate for the second quarter.

The prediction is a lot more optimistic than any made by the boards all last year when railroad business was generally accepted as being pretty good. It could reflect general agreement among the nation's shippers that the country's economy, rather than dipping, is headed for new heights.

Or, with the carloading estimates in 32 principal commodities falling just short of the 8 million mark, it could mean the railroads are expected to recapture a substantial portion of the transportation volume they have lost in recent years.

Considered in light of the general freight rate increases authorized by the Interstate Commerce Commission, the shipper board forecasts would seem to take on added significance.

The freight rate hike has "temporarily" slowed the rise in railroad carloadings, R. E. Covey, vice-president of the National Association of Shippers Advisory Boards and traffic manager, American Sugar Refining Company, told Railway Age last week.

Nevertheless, he said, the estimated carloading climb seems to be "conservative" and "does not represent the total of available freight" for the railroads. Railroads have "considerable range," he added, in which to pick up more traffic through improved handling and service.

A continued "upsurge" in the national economy is partly responsible for the anticipated rise in railroad business, the NASAB spokesman said. But, he continued, the "more aggressive spirit" being exhibited by railroads in the form of better schedules, new equipment, rate adjustments and "realistic efforts" to meet competition is equally important. He qualified his estimate of improving business only by saying that it is subject to the "ingenuity" of both railroads and shippers to stretch the car supply.

The booming railroad business forecast by the advisory boards bears out the optimistic picture painted for the industry in other quarters.

From another corner, there comes a warning that anticipated business will be more than the present railroad car fleet can handle. As reported in Railway Age, April 2, p. 13, Interstate Commerce Commissioner Clarke has predicted a car shortage "of very serious proportions," similar to that which hampered railroads in mid-1955.

Spurred by that situation and accompanying criticisms, as well as by the upturn in national business, railroads last year ordered more new freight cars than in any prior year since 1922. However, delivery dates for many of these cars are scheduled too late to help meet the expected traffic demands, and the situation is complicated by shortages of steel which could set back delivery of cars during the first half of the current year.

However, with their portion of

2ND QUARTER LOADINGS—1955 ACTUAL AND 1956 ESTIMATED

Shippers Advisory Board	Actual Loadings 2nd Quarter 1955	Estimated Loadings 2nd Quarter 1956	Per Cent Increase
New England	114,100	127,364	11.6
Atlantic States	704,801	740,094	5.0
Allegheny	878,238	948,199	8.0
Ohio Valley	918,385	1,036,308	12.8
Southeast	985,042	1,038,955	5.5
Great Lakes	621,795	620,448	0.2 dec.
Central Western	221,620	225,892	1.9
Mid-West	839,986	885,917	5.5
Northwest	596,782	609,308	2.1
Trans-Missouri-Kansas	341,920	351,982	2.9
Southwest	493,928	505,053	2.3
Pacific Coast	421,360	430,124	2.1
Pacific Northwest	272,195	272,415	1.2
TOTAL	7,410,152	7,795,059	5.2

2nd Quarter Loadings of Key Commodities—1956 Estimated, 1955 Actual

Commodity	Carloadings Actual 1955	Carloadings Estimated 1956	Estimated Per Cent Increase
Grain, All	343,257	359,899	4.8
Flour, Meal & Other Mill Products	321,009	323,214	0.7
Coal and Coke	1,802,483	2,000,296	11.0
Ore and Concentrates	826,101	856,183	3.6
Gravel, Sand and Stone	746,460	802,303	7.5
Lumber and Forest Products	594,277	610,909	2.8
Petroleum and Petroleum Products	315,318	323,874	2.7
Iron and Steel	510,209	530,447	4.0
Cement	214,685	226,975	5.7
Automobiles & Trucks	91,480	79,195	13.4*
Vehicle Parts	231,324	216,785	6.3*
Paper, Paper Bd. & Prepd. Rfg.	313,475	333,139	6.3

*Decrease.

ESTIMATED AND ACTUAL LOADINGS SINCE 1950

	Estimated Loadings	Actual Loadings
1950—1st Qtr.	6,770,603	5,938,445
2nd Qtr.	7,756,908	7,508,879
3rd Qtr.	7,662,277	8,263,691
4th Qtr.	7,711,309	8,034,778
1951—1st Qtr.	6,926,919	7,170,961
2nd Qtr.	7,993,831	8,252,030
3rd Qtr.	8,490,233	8,184,833
4th Qtr.	8,247,805	8,010,225
1952—1st Qtr.	7,327,951	7,143,183
2nd Qtr.	8,146,723	7,968,587
3rd Qtr.	8,090,936	7,441,174
4th Qtr.	8,129,875	7,777,541
1953—1st Qtr.	7,271,307	6,657,179
2nd Qtr.	7,634,850	7,779,006
3rd Qtr.	8,033,202	8,022,924
4th Qtr.	7,770,191	7,132,329
1954—1st Qtr.	6,561,552	5,841,216
2nd Qtr.	7,188,765	6,547,109
3rd Qtr.	7,334,436	6,805,819
4th Qtr.	6,519,232	6,742,242
1955—1st Qtr.	5,922,313	6,227,679
2nd Qtr.	7,014,610	7,410,152
3rd Qtr.	7,515,231	7,860,496
4th Qtr.	7,376,964	*
1956—1st Qtr.	6,743,214	*
2nd Qtr.	7,795,059	*

*Not available.

total intercity traffic volume having fallen off to less than 50% for the first time in history, railroads began a vigorous and concerted attempt to recapture some of the business that was being taken from them.

New emphasis has been placed on "sell" and "serve" in traffic departments, while fast freight schedules involving new mechanization of yards and extension of signaling controls became increasingly popular. Use of special purpose cars was stepped up and trailer-on-flat-car operations have expanded sharply.

The aggregate forecast of the 13 regional boards sees a decline in only six of the 32 commodities reported on, and only one board sees a net decline in carloadings in its area. Vehicles and trucks and vehicle parts are the chief items for which decreased carloadings are expected, reflecting the possibility of a comparative slump in the automotive industry. The 0.2% anticipated decline in the Great Lakes region, involving a loss of just 1,347 cars, may reflect the same downturn in the auto centers.

The overall forecast shows an anticipated rise of 5.2% in the number of freight cars to be loaded for the second quarter compared with the same period in 1955. The 13 boards estimated there will be 7,795,059 cars loaded, as against 7,410,152 last year.

The predictions, representing appraisals of the national transportation market by the 13 regional boards, have provided a trustworthy, if not infallible, barometer of railroad business over the years.

As the accompanying listing of forecasts for the past five years indicates, the boards have tended to be somewhat optimistic—as in the first quarter of 1954—but their estimates lagged behind actual loadings in the 1955 recovery. And they achieved near bomb-sight accuracy in the third quarter of 1953, with an overestimate of just slightly more than 11,000 cars of a total 8,022,904 actually loaded.

Fare Case Gets Expedited Procedures

For the railroads' passenger-fare case, the Interstate Commerce Commission has provided expedited procedures which will end with filing of briefs on or before April 27.

The railroad proposal calls for a 5% increase in basic fares, effective May 1 (Railway Age, April 2, page 7). The commission's order setting up expedited procedures was framed before southern roads joined the case and thus was based on petitions filed by eastern and western roads.

Ex Parte 202—The order instituted an investigation of the proposed increase, docketed the case as Ex Parte No. 202, and listed "possible suspension of the tariffs" among the matters involved. April 19 was fixed as the deadline for receipt of protests which "will be considered as addressed to the discretion of the commission," but which must not include prayers that they be considered also as formal complaints. Replies may be made to the protests which will be received in evidence unless objected to at the hearing.

The hearing will be held April 25 in Washington before the commission's Division 2 for the purpose of cross-examining witnesses who have filed verified statements or reply-verified statements. The railroads filed verified statements in support of the increase when they filed the tariffs March 30. Verified statements of other parties will be due April 19 and reply-verified statements must be filed by April 24. As indicated above, the case will be submitted with the filing of briefs on April 27. The order made no provision for oral argument.

Switchmen Seek 25% Pay Increase

A demand for a 25% wage increase and a penalty payment for holiday work has been served on all railroads having contracts with the Switchmen's Union of North America.

New Parade Train

Two-year-old Steve Zulfer of Council Bluffs, Iowa, looks over the Union Pacific's new one-third-scale miniature parade train. The new diesel unit replaces a model steam engine used by the UP since 1923. It cost the UP about $10,500, and is powered by a tractor unit inside the cab. The train represents the UP in parades, rodeos and other civic events.

RAILWAY MARKET OUTLOOK THIS WEEK

a RAILWAY AGE Workbook Page

Carloadings Up.—Loadings of revenue freight in the week ended March 31 totaled 724,944 cars, the Association of American Railroads announced on April 5. This was an increase of 27,696 cars, or 4%, compared with the previous week; an increase of 70,183 cars, or 10.7%, compared with the corresponding week last year; and an increase of 125,642 cars, or 21%, compared with the equivalent 1954 week.

Loadings of revenue freight for the week ended March 24 totaled 697,248 cars, the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, March 24

District	1956	1955	1954
Eastern	114,190	116,471	107,659
Alleghany	138,410	127,628	114,020
Pocahontas	59,523	53,468	43,990
Southern	133,484	102,589	117,279
Northwestern	74,834	70,874	68,154
Central Western	119,530	109,948	97,965
Southwestern	57,277	53,650	52,347
Total Western Districts	251,641	234,472	218,466
Total All Roads	697,248	634,628	601,414
Commodities:			
Grain and grain products	50,008	40,106	40,680
Livestock	7,060	7,001	7,344
Coal	133,155	106,937	95,731
Coke	13,349	10,969	7,897
Forest Products	46,591	40,330	37,855
Ore	21,599	16,372	15,113
Merchandise l.c.l.	60,232	61,148	64,768
Miscellaneous	365,254	351,765	332,026
March 24	697,248	634,628	601,414
March 17	685,985	650,924	609,959
March 10	697,601	662,283	609,937
March 3	710,996	653,575	590,576
February 25	687,018	631,072	595,031
Cumulative total, 12 weeks	8,255,257	7,661,949	7,363,137

New Equipment

FREIGHT CARS

► *Chesapeake & Ohio.*—Ordered from Pullman-Standard for delivery starting immediately 500 50-ton box cars originally ordered by New Haven; C&O agreed to buy equipment at total cost of $5.5 million when New Haven asked to withdraw from commitment to builder; cars are to be equipped with roller bearings, damage free loaders.

► *Illinois Central.*—First 100 of 2,000 box cars ordered last year from IC shops are being equipped with DF equipment at estimated cost of $2,000 a car (Railway Age, Aug. 29, 1955, p. 41).

► *Louisville & Nashville.*—Will order 2,000 coal hopper cars and 100 covered hopper cars, estimated cost $15,800,000.

► *Reading.*—Will equip 100 box cars with damage-free loading devices; cost $198,000.

► *Santa Fe.*—Will modernize 1,000 freight cars in its Topeka shops this year; work will include new insulation in old refrigerator cars, new steel floors in gondola cars.

New Facilities

► *Louisiana & Arkansas.*—Construction of a 2.5-mile line is proposed in application to ICC; proposal is part of plan to reach plant of E. I. du Pont de Nemours & Co. near Port Hudson, La.; also involved is acquisition of the South Shore's 4.5-mile line from Maryland, La., to Irene, and operation under trackage rights over another five miles of SS line from Irene to connection with new line at Port Hudson.

► *New York Central.*—Announced $6,039,000 centralized traffic control installation between Albany, N.Y., and Boston; project will provide NYC's leased property, the Boston & Albany, with single-track railroad, except for 6-mile stretch at Springfield, Mass., and area between Framingham and South Station, Boston; annual savings of $825,000, and initial track rehabilitation saving of $4,500,000, are anticipated; completion is expected in September 1957.

► *Reading.*—Will increase bridge and tunnel clearances on line from Philadelphia to Newberry Junction, near Williamsport, Pa.; approximate cost $168,000; project involves lowering tracks where Reading passes beneath Wissahickon avenue in northwestern Philadelphia, and change from double to single track through Manayunk and Phoenixville tunnels.

► *Southern Pacific.*—Announced it has a second common carrier pipe line project in study stage; new line would extend from San Francisco Bay refineries to Fallon, Nev., and Reno, at cost of $16 million.

B&M's Budd Car Brakes Pass Tests

Massachusetts Public Utilities Department finds they meet standards in recent braking tests held by road

"The tests have proved the cars are serviceable and safe. They not only met the tests; they didn't overrun," said D. M. Brackman, chairman of the Massachusetts Department of Public Utilities, on March 30, after witnessing braking tests of Boston & Maine RDC cars.

The tests were conducted by the B&M, operator of RDC trains involved in two separate collisions north of Boston on February 28, and by the Budd Company, builder of the self-propelled units. An ICC representative declined to comment pending release of the commission's report.

The tests were an outgrowth of hearings conducted after collisions which resulted in 13 deaths (Railway Age, Mar. 5, p 11). In addition to representatives of the Massachusetts DPU and the ICC, the tests were witnessed by representatives of the Maine and New Hampshire Public Utilities Commissions, the Brotherhood of Locomotive Firemen and Enginemen, and of the press, television and radio.

Not present, although invited, was Ernest Hopkins, general chairman of the Brotherhood of Locomotive Engineers, who did not attend because, he said, "The tests won't prove my point. That is, the Budds cannot stop in the snow."

Locale of Tests — Experiments were conducted along the B&M line from Boston to Concord, N.H., between Woburn Junction and Winchester, Mass., which is said to resemble that in the vicinity of Swampscott, Mass., where the collision resulting in the 13 fatalities occurred. Four RDC units were operated in multiple unit for the tests. Three units had been taken directly out of revenue service, and the fourth had just undergone routine annual inspection.

The lead unit, an RDC-2 passenger-baggage car, was equipped with instrumentation to record train speed, and the Rolokron releases occurring on each truck of each car in the train. A micro-switch installed on the brake valve was closed by the slightest movement of the handle from the OFF position. This switch made a timing mark on the recording instruments and released a paint capsule against the rail to permit measurement of stopping distance after application of the brakes. The last car was fitted with a pressure recording device to show brake cylinder pressure attained at the trailing truck. The front car was equipped with rail-wetting sprays forward of the leading axle.

Cloudy and Cold—Weather was cloudy and cold with an intermittent drizzle. The sprays provided additional rail wetting. Heavy, wet snow on the ground reached the head of the rail and was not disturbed by

WHAT B&M RDC BRAKING TESTS SHOWED

Test	Actual Train Speed Mph	Brake Cylinder Pressure Psi	Number of Rolokron Releases	Stopping Time Sec	Actual Stopping Distance Ft	Calculated Stopping Distance Ft
1	48	60-Service	Two	27.0	1,209	1,250
2	48	78-Emerg.	None	20.5	806	800
3	48	78-Emerg.	None	21.0	823	800
4	70	78-Emerg.	None	28.6	1,530	1,540

Tests 1, 2 and 3 on rail wet with mist and rail sprays.
Test 4 on rail wet with mist only.
Test 1 had discs and brake linings hosed with water prior to test.
Test 1 Rolokron releases occurred one on each truck of last car in train.

Linemen on the Job, Thanks to "Snow Cat"

During the past winter, a special vehicle consisting of a truck body mounted on caterpillar treads has been used successfully to transport Southern Pacific linemen through rough terrain over deep snows to clear trouble on line-wire circuits on the pole line. Operating out of Norden, Calif., in the High Sierras, the "snow cat" has carried linemen over snow that reached 26 ft deep on the level. Snow is often deep enough so that the "cat" can be parked underneath the pole line, enabling a man to stand on the roof to make repairs. The "snow cat" is radio-equipped so linemen can "keep in touch" with the Sacramento wire chief, 100 miles away, via nearest wayside radio station. "Outage time" of vital circuits was cut sharply.

air currents caused by passage of the train. Four tests were run. The first was a stop after a service application at 48 mph. The next two were emergency stops from 48 mph. The fourth was an emergency stop from 70 mph. Results of each test are shown in the accompanying table.

After the RDC test, a train consisting of a diesel locomotive and four conventional coaches was tested. From 50 mph with a service application, this train stopped in 1,380 ft. A B&M spokesman said: "This shows the Budd can stop 567 ft shorter than a conventional train. You can't give a full emergency stop on a diesel without flattening the wheels when they lock—and it's possible a car may jump the track."

The B&M stressed that the Budd train operated with wet brakes and artificially wet rails while the conventional train was not presented with these handicaps. After the tests, E. K. Bloss, B&M general mechanical superintendent, said, "Budd Highliner brakes proved themselves today."

Edward F. Lacey Dies

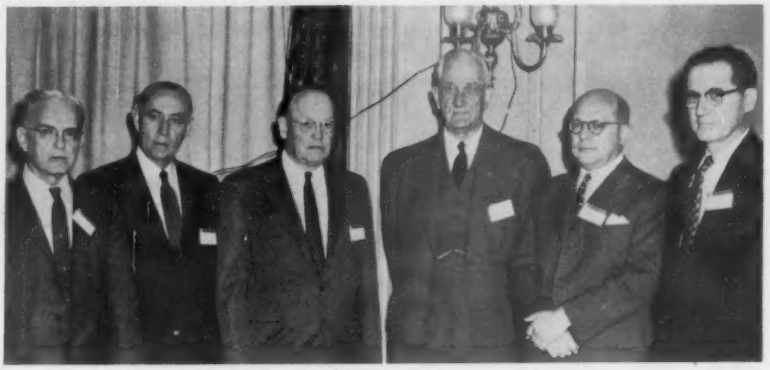
Edward F. Lacey, who retired in 1952 as executive secretary of the National Industrial Traffic League, died March 30, at Tampa, Fla., from injuries suffered in a January 31 automobile accident in which his wife was killed. Mr. Lacey's retirement from the NIT League staff came after 36 years of service, 17 of them as executive secretary. Since his retirement he had been associated with the Department of Commerce as secretary of its Transportation Council, and with the American University as director of its Institute of Industrial Transportation and Traffic Management.

TAA Head Cities Transport Improvements to NE Board

Gradual improvements in the national transportation situation are based on a better understanding of the public need as well as greater willingness of transport interests to cooperate among themselves, George P. Baker, president of the Transportation Association of America, said in Boston recently.

Mr. Baker, who is also professor of transportation at the Harvard Business School, addressed a meeting of the New England Shippers Advisory Board. He expressed doubt that anything "would be done" this year on the Cabinet Committee Report, as a "package," because of the controversy the report has aroused. "We believe, however," he added, "that transportation issues should be taken up separately on their individual merits, with emphasis first on those things which hold hope for some measure of agreement."

All general officers of the board were re-elected at the meeting.



TOP N&W BRASS at the road's 31st annual Better Service Conference in Roanoke, Va., March 23-24. Left to right are: L. C. Yates, general claim agent and conference chairman; F. S. Baird, traffic vice-president; H. C. Wyatt, vice-president and general manager; R. H. Smith, president; Stuart Saunders, vice-president and general counsel; and C. E. Pond, general superintendent motive power. Over 600 persons attended the conference.

N&W Plans More and Faster T-O-F-C

The Norfolk & Western plans to expand its piggyback operations and to speed them up to offer overnight service between the Bristol, Roanoke and Winston-Salem areas and the Jersey City-New York area.

This was revealed by N&W President R. H. Smith in his "annual report to employees" at the road's 31st annual Better Service Conference held March 23 and 24 at the Hotel Roanoke, Roanoke, Va. More than 600 employees and guests attended the sessions, the employees being delegates representing Better Service Clubs throughout the N&W system.

N&W's piggyback operations are conducted in conjunction with the Pennsylvania and they have been offering service between the Bristol and Roanoke areas and New York. In announcing the planned speed-up and extension to the Winston-Salem area, Mr. Smith said he hoped these improvements "will add substantially to our volume of high-class traffic and will help to take a lot of the traffic off overburdened highways."

Faith in Steam—Commenting on the N&W's ordering 83 diesel-electric locomotives, Mr. Smith said this "new thing" for the road "does not mean we have lost faith in or admiration for coal-burning locomotives." He added:

"Our Class A's and Y-6's, all built in your Roanoke shop, are doing a great job for us. We have faith that the steam turbo-electric, the first of which is our No. 2300, will prove itself a model of operating effectiveness and economy. And there are distinct possibilities for the coal turbo-electric which changes the heat energy in coal into electric energy without going through the medium of water as a converter.

"But we also realize that these two types of locomotives could be economic only for big heavy-tonnage main line jobs and could not be economic for the varying power demands on the lighter service side lines or in yard operation. So we ordered the diesel-electrics which have the characteristic of being able to be combined and worked in tandem to make any size locomotive the particular job at hand demands."

L. C. Yates, N&W general claim agent, was general chairman of the conference, and J. F. Jamison, district claim adjuster, presided at the March 24 session. Speakers, in addi-

tion to President Smith, included three N&W vice-presidents and its general superintendent of motive power, C. E. Pond. The vice-presidents were: F. S. Baird, traffic; S. T. Saunders, who is also general counsel, and H. C. Wyatt, who is also general manager.

Report on Derailment of PRR "Embassy"

Confirming tentative conclusions reached at the time of the accident, the Interstate Commerce Commission has found that a broken journal caused the February 23 derailment of the Pennsylvania's "Embassy" at Vern, Md., near Baltimore.

Derailment occurred when the Washington-New York train was traveling 80 mph, its maximum authorized speed. There were 120 casualties, including deaths of four passengers and two employees, and injuries of 94 passengers and 20 employees, including four employees of the Pullman Company (Railway Age, March 5, p. 11). The commission's formal finding came in a report (No. 3677) by Commissioner Clarke.

Lack of evidence left the commission unable to suggest how the journal happened to fail. "The metal along the periphery of the fracture," the report said, "was scored as a result of the failure to the extent that the cause of the origin of the fracture could not be determined."

No Defects Found—Laboratory tests made after the accident disclosed that the chemical composition and physical properties of the journal were in accordance with specifications of the Association of American Railroads. Examination of the roller-bearing assembly "disclosed no defective condition that would have contributed to failure of the journal," the report also said. It added that the assembly was "well lubricated and showed no indications of heating other than that caused by the broken end of the axle."

The journal which broke was the left rear journal on the front truck of the train's sixth car, a coach of "conventional all-steel construction." The train consisted of 14 cars, all of which were of the "conventional" type except the fifth, a coach of lightweight-steel construction.

The train was northbound No. 154, and the accident occurred about 25 minutes after it left Washington—at 5:26 p.m., when it was dusk and the weather was clear. It occurred on the middle track on a tangent section of three-track line after the train had passed a cross-over switch. The line is electrically operated and thus equipped with an overhead catenary system.

Derailed equipment included the rear truck of the fifth car and all nine cars behind it. The ninth car, a coach, struck the pole of a catenary bridge, as did the front end of the eleventh car, a diner. As to the latter, which was "demolished," the commission also said: "The body of the car was crushed inwardly a distance of approximately one-third the length of the car. The catenary-pole foundation was uprooted and moved about 30 ft northward. The pole was bent around the car."

The ninth, tenth and twelfth cars were "badly damaged," and the fifth to eighth, inclusive, and the thirteenth and fourteenth were "somewhat damaged." The track structure was destroyed throughout a distance of 547 ft northward from the derailment point; but the commission found no track condition which could have contributed to the accident.

The coach on which the journal failed was built in 1915. It was 80 ft 3¾ in. long and its light weight was 135,000 lb. It had 11-in. journals and multiple-wear, 36-in. wheels. The axle involved was manufactured in 1949, and it received magnetic particle tests on May 19, 1954, when no defective condition was found. The roller bearing assembly, in service since April 1950, had been disassembled and inspected September 17, 1955, and no defective condition was found. The train was inspected before its departure from Washington and no defect was found. The first the crew knew of anything being wrong was when derailment occurred.

Examination of the equipment after derailment disclosed that the journal had broken inside the roller bearing inner race at a point ⅜ in. from the root of the fillet and 9 in. from the end of the journal. The break was "approximately vertical," and the broken surface of the portion of the journal remaining in the box

(Continued on page 14)

Technical Tidings

Selected from April Railway Monthlies

The rapidly growing fleet of mechanical refrigerator cars has been equipped with many recently developed devices. Temperature control is a vital function and two approaches to this important problem are discussed in the current Railway Locomotives & Cars.

The final installment of Leo Blanchard's series on how to inspect track appears in April Railway Track & Structures. This installment tells what to look for when inspecting turnouts, highway crossings and conditions around bridges and culverts. It also outlines the patrolman's responsibilities and deals with the frequency of patrolling.

Texas & Pacific 240-mile CTC from Fort Worth to Texarkana, Ark., has signal aspects and controls permitting enginemen to bring trains up to and through turnouts at ends of sidings, at 30 mph. The April Railway Signaling & Communications describes the installation.

High-potential testing with direct-current rather than alternating current may prevent many failures of locomotive motors and generators. It is a possible means of predetermining the life of such machinery, according to the April Railway Locomotives & Cars.

How the GM&O plans to extend the life of a long, high timber bridge is described in Railway Track & Structures. Using special spraying equipment for the surface work and pressure equipment for internal treatment, the railroad hopes to get 5 to 10 more years of service from the trestle by treating it with a 6% solution of penta in oil.

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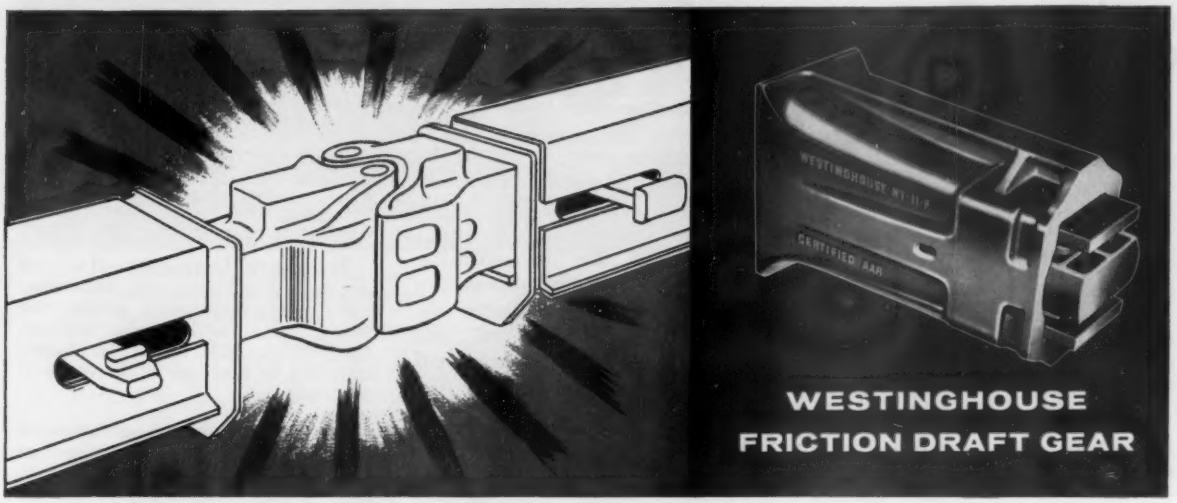

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(Continued from page 12)
indicated to commission investigators that a crack "had originated on the circumference of the journal and had extended completely around the journal." They also concluded that the crack extended over approximately 80% of the fractured area before the final break occurred.

"After the journal was broken," the report also said, "wear and flow of metal, resulting from the friction of contact between the broken end of the axle and portions of the journal-box assembly, had continued until the broken end of the axle worked free from the box. The rear end of the equalizer was then permitted to drop sufficiently to contact rail braces and other portions of the track structure. After this occurred the concentration of weight on the right wheel caused this wheel to act as a fulcrum and tended to raise the left wheel off the rail. The right wheel was then free to drop inside the rail."

Capital Outlays Seen Up 46%

The 124 Class I line-haul railroads which have submitted estimates to the Interstate Commerce Commission expect to make 1956 gross capital expenditures of about $1,269 million. That would be $399 million, or 45.9%, more than their 1955 outlays.

The latter totaled $869 million, while total 1955 outlays of all Class I line-haul roads were $908 million. The five roads which did not submit 1956 estimates made 1955 expenditures totaling $39 million.

These figures were reported by the commission's Bureau of Transport Economics and Statistics in its "Transport Economics." The report also included the accompanying table, showing the breakdown by road and equipment of estimates submitted for this year's first half, and comparative figures for the first half of last year.

Actual and estimated gross capital expenditures of Class I railways, first six months of 1955 and 1956

Period	Number of roads	Road	Equipment	Total	Percentage distribution Road	Equipment
Actual:						
1st half 1955	129	$128,466,937	$254,183,189	$382,650,126	33.6	66.4
1st half 1955*	124	124,520,552	250,100,730	374,621,282	33.2	66.8
Estimated:						
1st quarter 1956	124	80,524,377	249,485,836	330,010,213	24.4	75.6
2nd quarter 1956	124	103,720,093	233,130,930	336,851,023	30.8	69.2
1st half 1956	124	184,244,470	482,616,766	666,861,236	27.6	72.4
Per cent of increase: 1st half 1956 vs. 1st half 1955	124	48.0	93.0	78.0	—	—

* Excludes figures for 5 roads which did not furnish 1956 estimates.

SP Cuts Sand Consumption by 83%

An improved method of track sanding developed by the Southern Pacific will reduce the quantity of sand deposited on the rail by 83% and still prevent locomotive wheels from slipping. The new system involves improvement of the sanding mechanism to control more closely the amount of sand used and to place it where it will be most effective.

When the SP's research division began studying the sanding problem three objectives were established:

- Reduce fouling of ballast caused by contamination from locomotive sand (which cost the SP an estimated $500,000 last year).
- Reduce the amount of locomotive sand used. Sand purchase, transporting, drying and storage costs the SP about $450,000 annually.
- Obtain improved efficiency in application of sand to reduce wheel slippage and the damage it causes.

Tests to determine the amount of sand needed—conducted at the Battelle Memorial Institute, Columbus, Ohio, and at the Stanford Research Institute, Menlo Park, Calif.—revealed the minimum quantity of sand required for effective wheel-slip control was only one-quarter pound per wheel per minute at 14 mph. But practical operating conditions make it necessary for the optimum amount to be one-half pound per minute per wheel, at 14 mph, the SP says.

Previously, as much as three to five pounds of sand were being delivered per minute for each wheel. Reduction of sand delivery to the one-half pound rate represents a minimum saving of five-sixths.

To achieve increased efficiency in sanding despite decrease in the amount of sand used, SP researchers recommended several modifications and adjustments in the type of sanding equipment used on most SP locomotives. In addition, a new design of sand nozzle has been introduced to improve sand placement.

Organizations

Marquette University.—The university, in cooperation with Milwaukee traffic and transportation groups, will present an industrial traffic institute, April 19-20, with the traffic department and its functions as the theme of the conference.

National Coal Association.—Dr. Ford K. Edwards has resigned as director of the association's department of coal economics, a position he held for six years. Dr. Edwards, who is in his third year as secretary of the Association of Interstate Commerce Commission Practitioners, will open offices as a transportation consultant in the Perpetual building, Washington, D. C., on May 1.

Railway Systems and Procedures Association.—Following is the program of the spring meeting, to be held in the Morrison Hotel, Chicago, April 17-19.

TUESDAY, APRIL 17

10 a.m.

President's annual report, by W. A. McClintic, tax commissioner, Chesapeake & Ohio.

Address by A. R. Seder, vice-president, Association of American Railroads.

1:30 p.m.

Integrated Data Processing Without a Computer—Accounting Modernization Program of the Minneapolis & St. Louis, L. S. Provo, vice-president and comptroller, M&StL, chairman.

WEDNESDAY, APRIL 18

9:30 a.m.

Computer Applications—

Preparation for a Large Computer on the Southern, C. M. Davison, Jr., comptroller, and R. B. Curry, assistant comptroller, Southern.

Inter-Railroad Use of Common Data Processing Facilities, H. J. Van Ness, manager, transportation section, and E. R. Hotte, methods engineer, Teleregister Corporation.

1:30 p.m.

Integration Helps Solve Some Supply Problems, F. W. Pettit, general purchasing agent, and B E. Wynne, controller, Western Maryland; and G. H. Redmond, management planner, Westinghouse Air Brake Company.

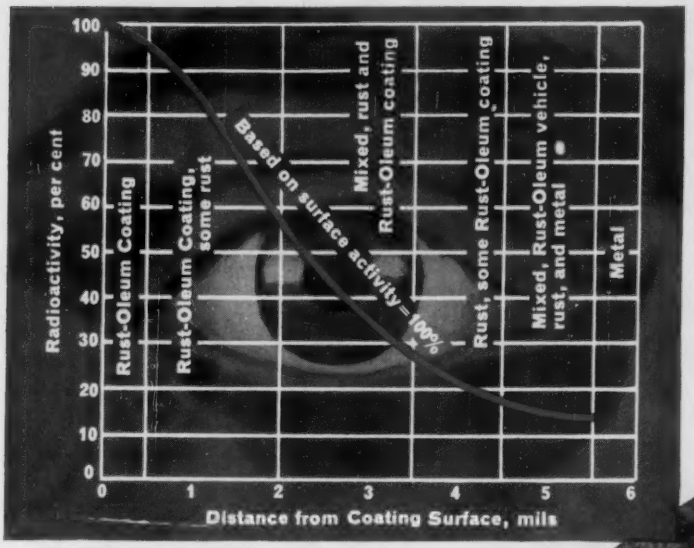
THURSDAY, APRIL 19

9:30 a.m.

Inter-Road Paperwork Integration, R. M. Sutton, vice-president and general auditor, Union

(Continued on page 20)

See Rust-Oleum *penetrate rust* to bare metal through the "Eyes" of Radioactivity!



Curved line illustrates Rust-Oleum penetration through rust at each mil level as recorded by Geiger Counter.

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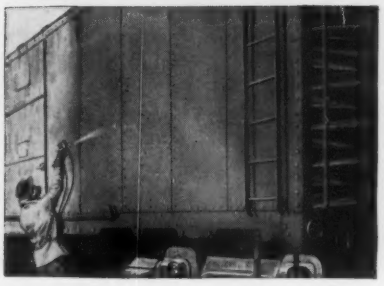

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Questions and Answers

Of current interest

to the Transportation Department

What are the advantages of prior classification in freight service . . .

?

Answers to the car service quiz in the March 12 column are coming in, some of them right and some wrong. Remember, we'll give our answers in the April 23 Railway Age, along with the names of those who have sent us the right solution. That means we'll have to receive your answer on or before April 16, if your name is to be printed in the first group of names of correct respondents.—*G.C.R.*

CONDUCTED By G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.

Better service, reduced cost.

I think this subject is so important that it deserves all the attention which can be given to it. To "kick off" discussion of it, we print below the advantages of prior classification listed by a committee of the American Association of Railroad Superintendents. This report was presented at the annual meeting of the AARS in June 1955.—*G.C.R.*

"1. There is no doubt that considerable reduction in transportation cost will be secured by reducing the number of yard handlings given to freight cars moving across any railroad. These costs will also be reduced because trains of solid classification can effect speedier road movements. There is no doubt further economies could be effected in transportation costs if trains, after they were prior classified to permit prompt movement between distant terminals, were handled a longer distance by one crew.

"2. Since it is evident that prior classification permits of more prompt movement, a better service will be rendered to rail customers. This improved service will reduce the amount of car tracing required by shippers and result in savings to traffic departments.

"3. When freight cars are handled more promptly, they can, of course, produce more turns or handle more loads per month on any given road. This, of course, results in more efficient use of freight car equipment. This in turn means fewer freight cars are needed to handle the traffic load and reduces the capital investment required for rolling stock. Inasmuch as most railroads are charged large sums for rental of other road's equipment, more efficient handling will result in a reduction of the per diem bill.

"4. When freight cars are able to bypass shifting yards in their route, there is less chance for damage to the lading; and, therefore, considerable reduction in loss and damage can be effected by greater use of prior classification. The delays resulting from shopping in yards will be reduced; and, as a result, the movement of freight will be expedited. We will also receive fewer claims from customers with the end result that we will have more satisfied rail customers. Loss and damage payments are one of the heavy casualty accounts on all railroads and any plan of operation that will reduce these payments is very desirable.

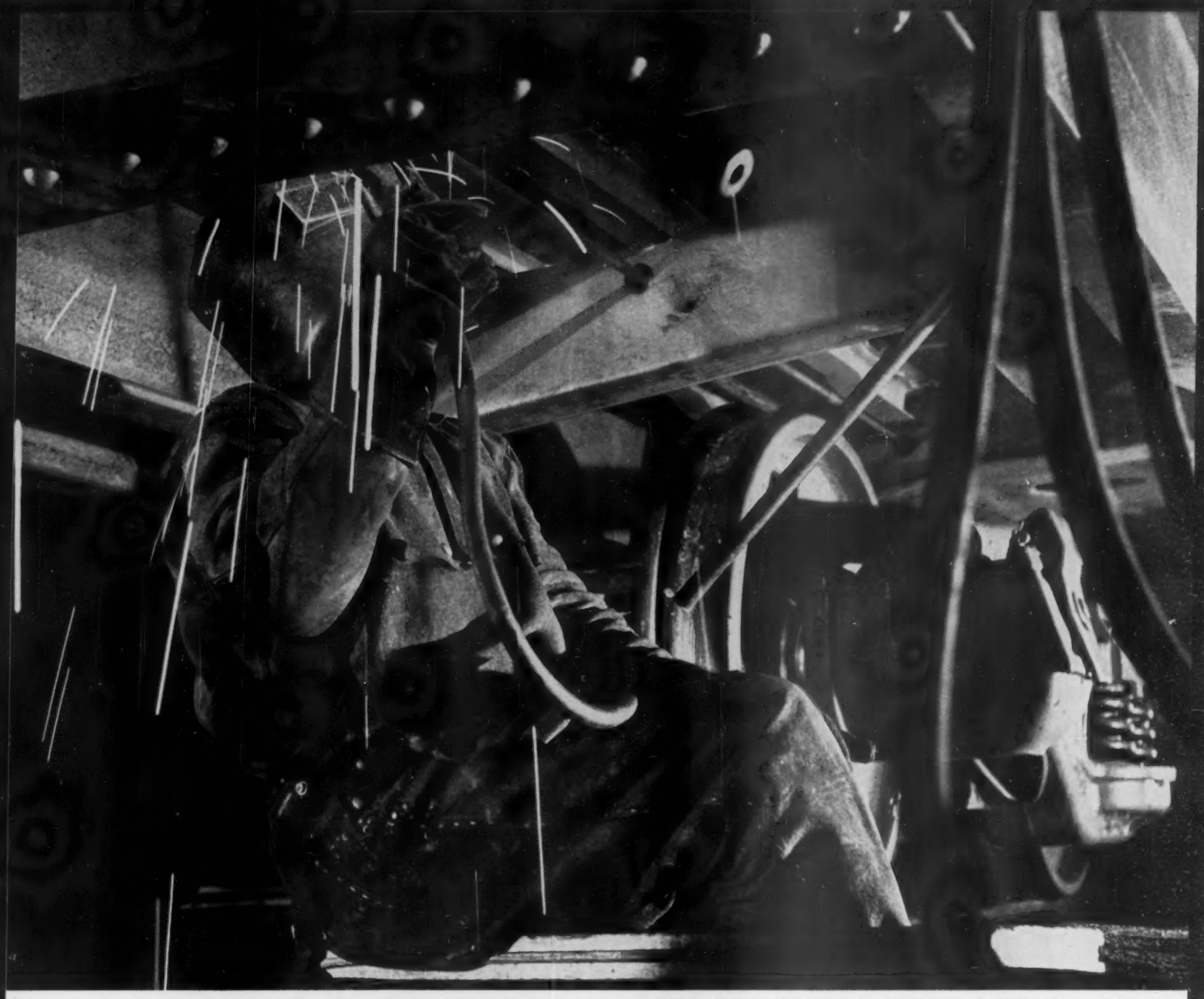
"5. The number of yards and terminals on a railroad can be materially reduced by proper planning of locations where freight cars can best be classified into blocks for distant hauling. There is no doubt that many yards and terminals have become obsolete because of age, and modern railroading should be able to reduce materially the number of yards required to carry on high-speed freight service.

"6. If freight traffic can be moved more promptly through various yards and terminals and over the road, it will result in more efficient use of locomotive power. Less total horsepower to move freight over any given railroad will be required.

"7. The future of our industry requires that we improve our service, and by greater use of prior classification we can effect such improvement. This will permit us to attract new business as well as retain present traffic which is carried by the railroads."

•

In the not too distant future we hope to run some questions and answers, based on this report. In the meantime, I'd like to point out that the report from which the above-quoted material is taken was prepared by a large group of transportation officers.



Welding N-S-F to the underframe in new C&O boxcar at ACF Industries, St. Louis.

N-S-F* helps THE C AND O BUILD FOR THE FUTURE

Panels of NAILABLE STEEL FLOORING at doorway of a C&O boxcar under construction. N-S-F is supplied in panels for quick, economical installation.

With cars equipped with NAILABLE STEEL FLOORING, progressive railroads can furnish shippers with Class A cars for all kinds of lading. And, moreover, this modern flooring—in both new and used freight cars—can effect considerable savings over the years in both original investment and maintenance costs.

Up-to-date performance and cost studies are available from our representatives in Atlanta, Chicago, Denver, Montreal, New York, Omaha, Philadelphia, St. Louis and San Francisco.

*N-S-F—NAILABLE STEEL FLOORING

Made and sold only by

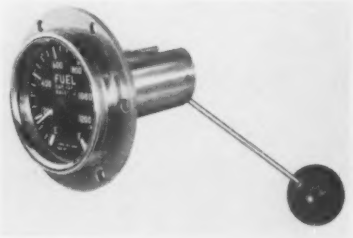
STRAN-STEEL CORPORATION

Ecorse, Detroit 29, Michigan • A unit of

NATIONAL STEEL CORPORATION

56-SS-6A

WHAT'S NEW in Products

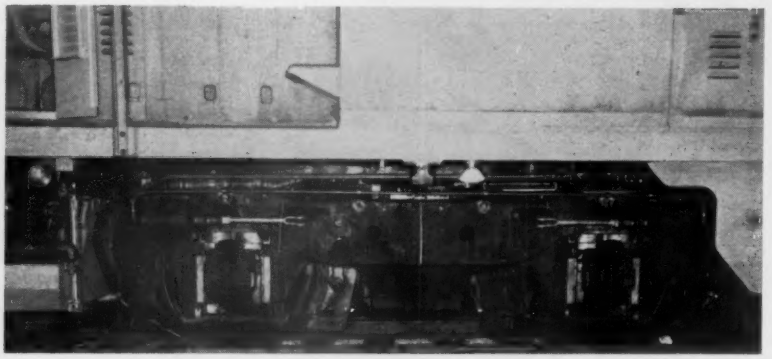


TANK LEVEL GAGE

A dial type gage, the D6, permits instant direct reading of railroad tank contents. The gage is designed for fuel or water gaging on diesel locomotives, passenger cars and mechanical refrigerator cars. It is said to offer improved reading over sight gages where fuel oil stains on the glass obscure accurate indication. Fluorescent dials on the D6 facilitate night readings.

Dial indication on the D6 is effected by float actuation and direct mechanical linkage through a special bellows seal. This seal is designed to eliminate fuel and vapor leakage into the dial. There is said to be little possibility of fuel loss and fire hazard is reduced. Calibrated in gallons, the gage can be used to gage any size or shape fuel or water tank.

The gage float is made of solid synthetic material and is both water and fuel proof. *Liquidometer Corporation, Dept. RA, 36th st. and Skillman ave., Long Island City 1, N. Y.* •

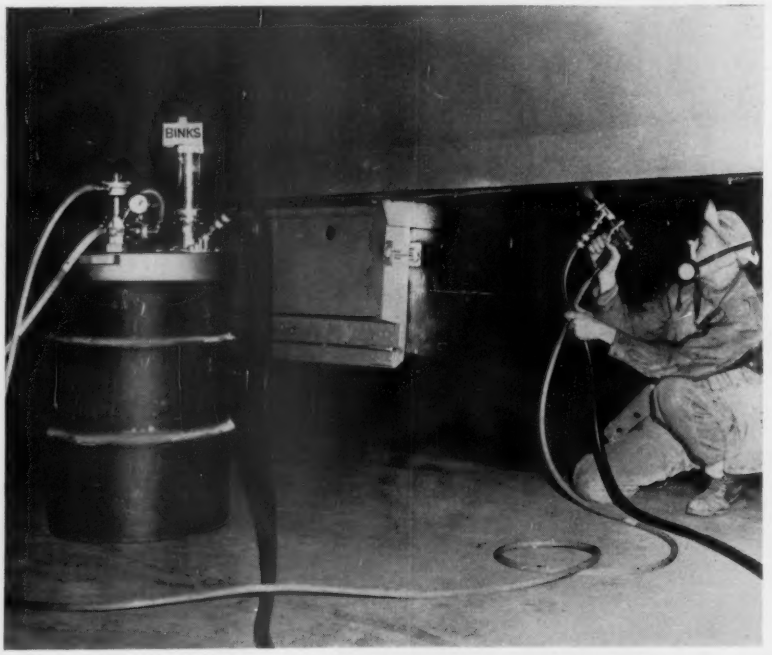


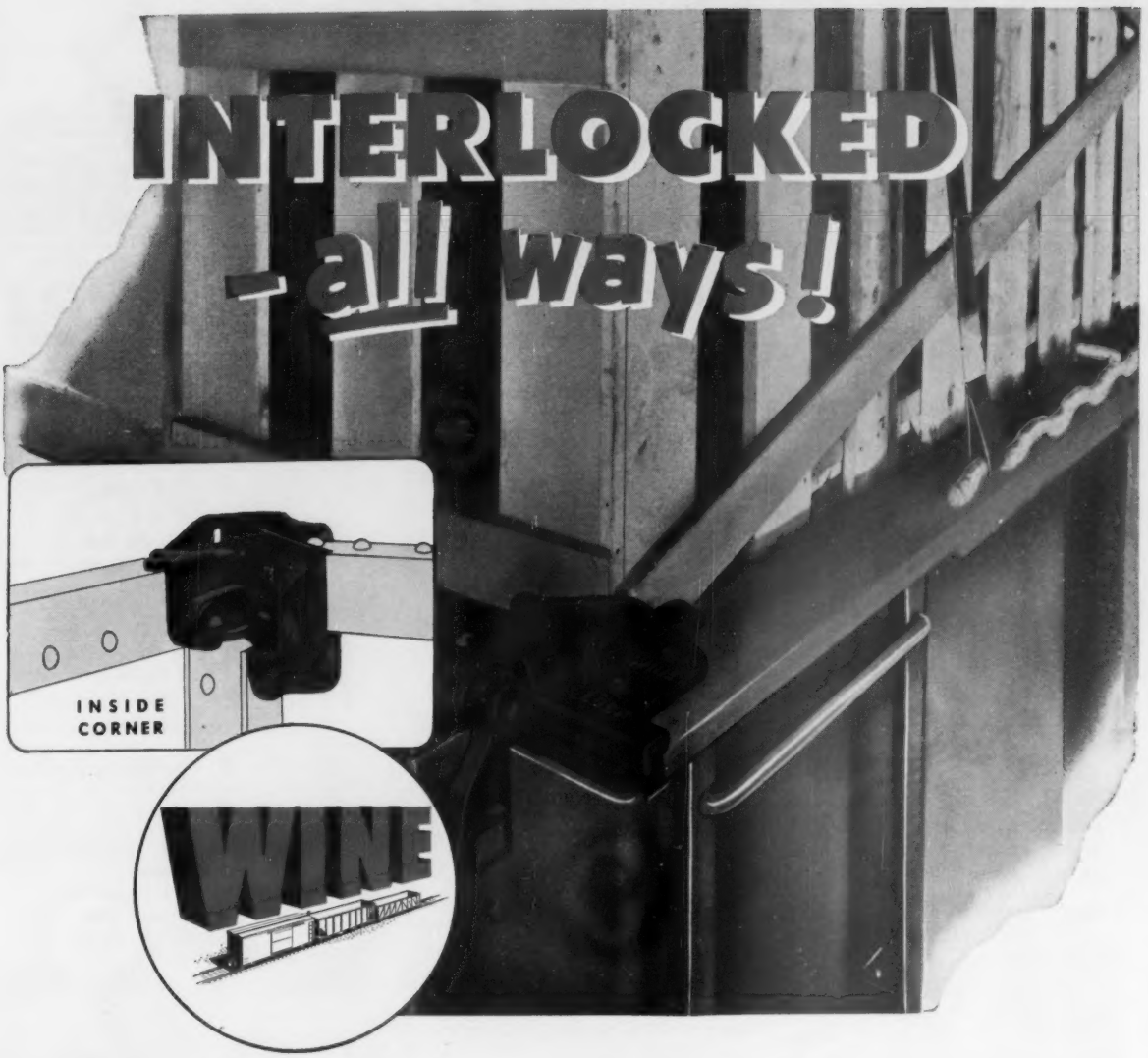
LOCOMOTIVE TRUCK

New truck applied to EMD switchers delivered to the Illinois Terminal is expected to be simpler to maintain than previous models while giving a comparable ride because of the elimination of the swing hangers and elliptic springs. The all-coil-spring truck is similar in principle to the type used on the EMD SD-9 road switcher. It is fully flexible with controlled lateral movement 1¼ in. each way. Separate bolster springs give increased vertical deflection for a soft ride. The new truck can be used interchangeably on existing switchers by making minor changes in the piping to meet clearance requirements with underneath-mounted equipment on the underframe. *Electro-Motive Division, General Motors Corporation, Dept. RA, La Grange, Ill.* •

AIR-OPERATED PUMPS

A new line of air-operated pumps can handle a wide variety of fluids or semifluids directly from the original 55-gal drums. It is said that these pumps are suitable for applying fine finishes to all surfaces; for painting cars; for applying heavy protective coatings to steel and iron work; for undercoating rolling stock; for applying calking and sealing compounds to refrigeration equipment; for extruding semifluid materials; and for transferring paints and similar non-corrosive fluids. The pump delivers material on both the up and down strokes which allows slower operation. The slower motion of all parts is said to reduce wear substantially and assure longer pump life. *Binks Manufacturing Company, Dept. RA, Chicago 12* •





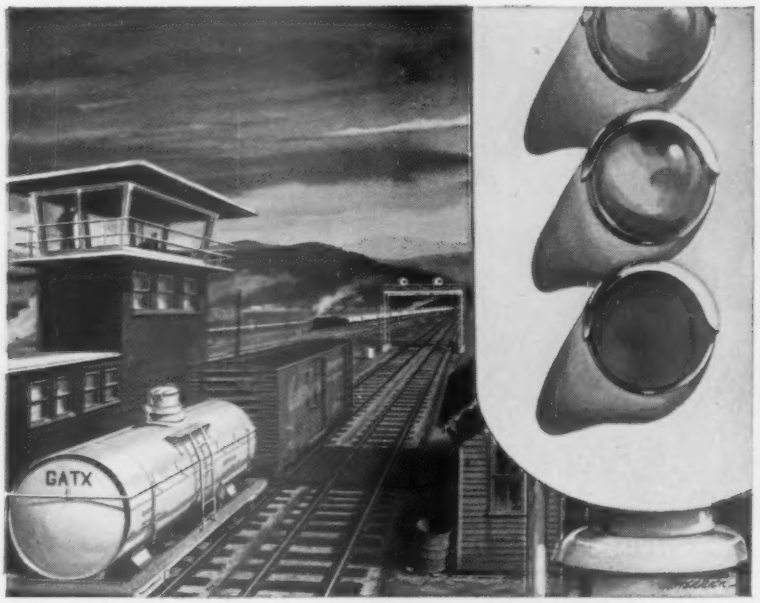
DROP END LOCKS

KEEP CORNERS FROM SPREADING • WON'T ACCIDENTLY OPEN

The Wine Drop End Lock has an unequalled record for continuous service with minimum maintenance. Progressive developments include the addition of a pry-bar opening to facilitate easier drop end closing, even when the car structure is distorted from hard service.

The 3-way interlocking feature assures positive closure and retains the end and sides in their original relative position by preventing the sides from spreading at the corners. Equipped with the Wine Drop End Balancer in combination, one man closure of the heaviest drop ends is safe, fast and economical.

THE WINE RAILWAY APPLIANCE CO. TOLEDO 9, OHIO



Aluminum Paint Protects

against rust, smoke and fume corrosion

Here is a way to cut costly railroad maintenance and equipment replacement. Here's how you can keep equipment in top operating condition.

Good aluminum paint actually puts a *protective shield* on rustable metal and masonry surfaces. It guards against rust, smoke and fume corrosion...and beautifies as it protects. It reflects up to 85% of the sun's heat to minimize expansion problems.

Use aluminum paint on your signaling and communication equipment, bridges, towers, freight and passenger cars, buildings and other structures and equipment. Usually a single coat is all that's required. And the time between paintings is longer because *one* coat lasts and lasts. You reduce maintenance costs, get extra protection.

Reynolds does not make aluminum paint. If you would like the names of manufacturers who rely on the high quality of genuine Reynolds Aluminum Pigments, we'll gladly send you the list. Just use the coupon below.

Aluminum *Roof Paints and Coatings* Add Years to Roof Life

Asphalt-Aluminum roof paints and coatings provide low-cost, long-life protection for built-up and rustable metal roofs. Also reflect sun's heat to keep buildings up to 15° cooler in summer. Ask the paint salesman to show you his heat reflection demonstration. Insist on Asphalt-Aluminum roof paint or coating with this Warranty Seal. It assures you of an approved vehicle and at least two full pounds of pure aluminum pigment in every gallon.

See "FRONTIER," Reynolds exciting dramatic series, Sundays, NBC-TV.

Reynolds Metals Company
P. O. Box 1800-PO, Louisville 1, Kentucky
Please send me information about:
☐ Aluminum Paints.
☐ Roof Coatings.
☐ Also send me list of manufacturers.

Name_____
Company_____
Address_____
City_____ Zone____ State_____

The Finest Paints Made with Aluminum are made with REYNOLDS ALUMINUM PIGMENT

By the makers of Reynolds Wrap

Organizations

(Continued from page 14)

Pacific, chairman; C. M. Davison, Jr., comptroller, Southern; W. J. Manning, auditor revenues, Erie; E. E. Seise, assistant to president, Erie; H. J. Ward, comptroller, Pennsylvania.

Are There More Possibilities for Integration?, J. W. Milliken, director research, Railway Age, chairman; W. C. Allen, manager transportation engineering, Pennsylvania; C. C. Cather, research supervisor, Southern Pacific; M. M. Scanlan, general freight agent, Great Northern; J. H. Wallis, superintendent communications, Baltimore & Ohio.

Western New York Institute of Transportation.—"Pulling Together for a Better Transportation System" is the theme of an all-day meeting scheduled for April 10, in the Hotel Statler, Buffalo, sponsored by the Transportation Association of America and cooperating organizations. Richard L. Bowditch, chairman, C. H. Sprague & Son Co., will be the luncheon speaker; subject—"Future Unlimited." William White, president, Delaware & Hudson will take part in a morning-session discussion of the responsibility of carriers.

Financial

Boston & Maine. — *Ten-Year Contract for President.*—A 10-year contract at $75,000 per year for Patrick B. McGinnis, president, will be voted on at the April 11 annual meeting of B&M stockholders. A proposal to give Mr. McGinnis an option to buy 25,000 shares of B&M common stock at $26.62 a share also will be voted on at the meeting.

Monon. — *New Directors.* — New York investment interests, headed by Sutro Brothers & Co., investment bankers, and members of the law firm of Buchman & Buchman, elected seven members to the Monon's 11-man board at the road's first stockholders' meeting since 1933. All seven were nominated by the road's management and were not opposed for election. From 1946, when the Monon came out of bankruptcy, until January this year, control of the line was vested in three stock trustees, appointed by the court. The new board will continue the Monon's current management and will strive to strengthen the road's position.

New York, Chicago & St. Louis. —*Stock Split.*—This road has applied to the Interstate Commerce Commission for authority to issue 5,531,104 shares of common stock with par value of $15 per share to be exchanged on a two-for-one basis for presently outstanding common with par value of $20 per share.

New York, New Haven & Hartford—*Would Borrow $46,520,000.*—Preferred stockholders of the New

(Continued on page 40)

The RIGHT way on the Right-of-Way!

Fuel injection equipment is truly the heart of diesel performance and plays a mighty important part in efficient railroad operation.

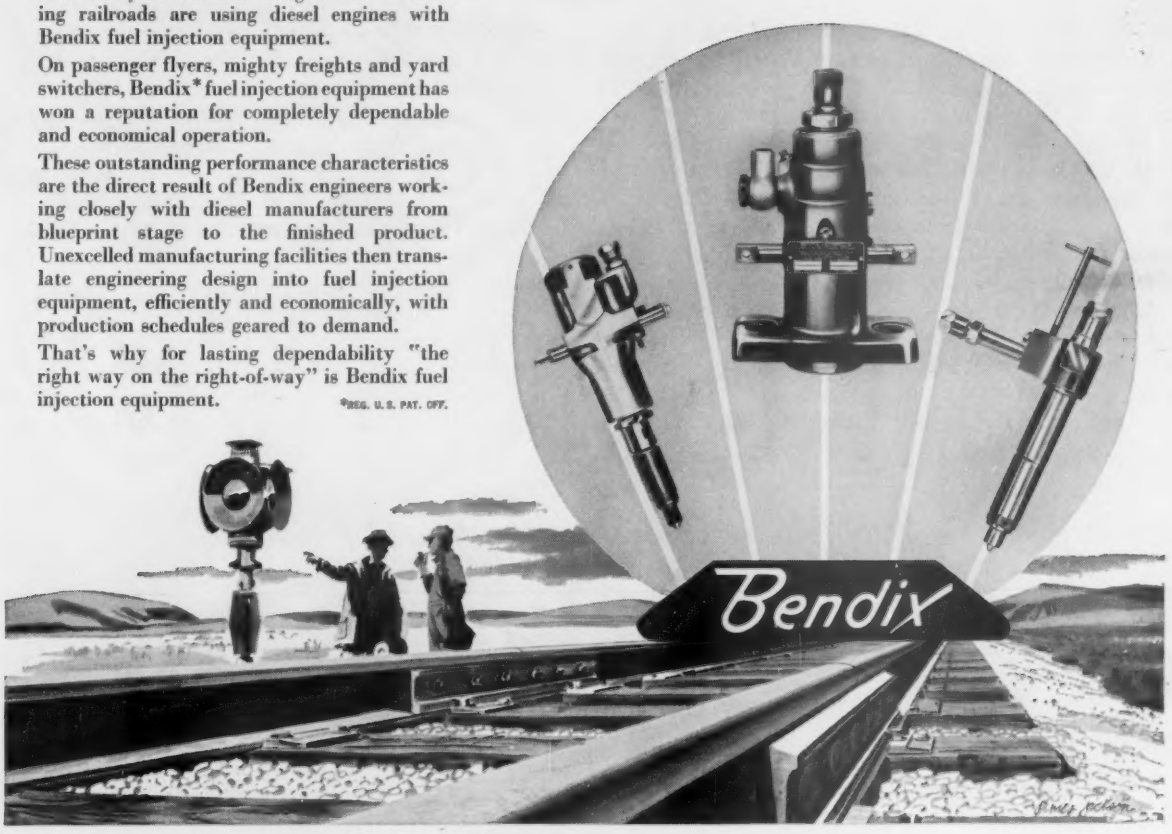
That's why an ever-increasing number of leading railroads are using diesel engines with Bendix fuel injection equipment.

On passenger flyers, mighty freights and yard switchers, Bendix* fuel injection equipment has won a reputation for completely dependable and economical operation.

These outstanding performance characteristics are the direct result of Bendix engineers working closely with diesel manufacturers from blueprint stage to the finished product. Unexcelled manufacturing facilities then translate engineering design into fuel injection equipment, efficiently and economically, with production schedules geared to demand.

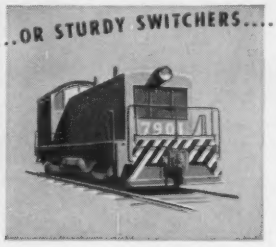
That's why for lasting dependability "the right way on the right-of-way" is Bendix fuel injection equipment.

*REG. U.S. PAT. OFF.



SCINTILLA DIVISION OF Bendix AVIATION CORPORATION • SIDNEY, NEW YORK

Export Sales: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.



YOU CAN DEPEND ON

BENDIX*

FUEL INJECTION EQUIPMENT

45 G-E Super Gas Turbine-electrics Will Haul Union Pacific Freight Faster

In 1957 Union Pacific will receive the first of 45 new G-E gas turbine-electric locomotives. Delivery of the first unit will mark the culmination of 10 years of intensive research in the gas turbine-electric locomotive field.

Union Pacific President Arthur E. Stoddard has said of the new locomotives, "This power will aid our program for handling our expanding freight traffic load more efficiently. Union Pacific hauls freight faster than any other railroad in the world . . . this new equipment should enable us to do an even better job."

These new locomotives are designed to haul freight pay loads exceeding 5000 tons throughout the West. They will surpass any internally-powered units ever built in their ability to haul trains faster. Powered by 8500 hp they are geared for top freight speed of 65 mph. They are engineered to operate efficiently through a wide and rugged range of weather, temperature and terrain.

Cost of mechanical repairs on these locomotives is expected to be considerably less than on diesel-electric units of the same train handling capacity. Savings are also anticipated in electrical and power plant repairs.

Union Pacific has pioneered with G.E. in the field of gas turbine-electric locomotives. Since 1949 U.P. has installed 25 G-E 4500-hp units which each month see 10,000 miles of service.

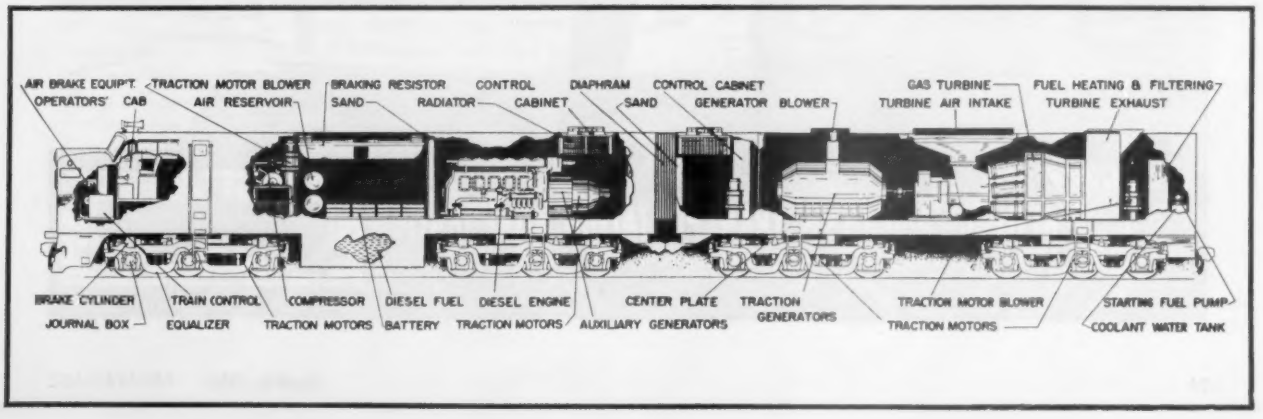
As the nation grows, and as railroads grow, G.E. research and engineering will constantly strive to further railroad progress. Ask your G-E Apparatus Sales representative for more information, or write Section 135-2, Locomotive & Car Equipment Dept., Erie, Pa.

Progress Is Our Most Important Product

GENERAL ELECTRIC

LATEST OF 25 General Electric 4500-hp gas turbine-electric locomotives currently in service on Union Pacific Railroad. In the past 4 years these units have efficiently handled heavy freight service over more than 6 million miles of rugged western terrain.

UNION PACIFIC President Arthur E. Stoddard (left) and General Manager Guy W. Wilson, of General Electric's Locomotive and Car Equipment Dept., inspect a scale model of the new G-E gas turbine-electric locomotive. Operating units (see diagram below) will weigh 408 tons on 12 axles and will be 165 feet long (including the fuel tender) and 16 feet high.



"Nitric Acid leaking— we need help fast."

A General American District Manager got this message. One of his customers was in trouble. A 50,000-gallon tank of concentrated nitric acid had sprung a leak. The acid would be lost . . . property would be damaged . . . lives might be endangered. Fast action was imperative!

Nitric acid? That called for stainless steel tank cars. Where were the nearest ones? Find them . . . explain the situation. Call the railroad. Have a special train made up. Pick up the cars and highball to the trouble spot. Above all, hurry.

Within hours, the GATX stainless steel cars were at the plant, the acid was transferred to the cars and the storage tank repaired with a minimum of loss.

Unusual? Of course . . . but unusual service is one of the many benefits offered to lessees of GATX tank cars. There are over 48,000 cars in the GATX fleet . . . over 200 different types . . . available for your use without capital investment. To keep this fleet rolling, General American maintains a nation-wide network of district offices and shops that provide service on a 24-hour basis. That's why, when it comes to dependability, *it pays to plan with General American.*

GATX GENERAL AMERICAN TRADE MARK

GENERAL AMERICAN TRANSPORTATION CORPORATION

135 South La Salle Street • Chicago 90, Illinois

Fervor *Plus* Good Cars

For the twentieth consecutive year, the carriers and their customers will go through the special and dedicated efforts which set April Perfect Shipping Month apart from the less dramatic, but indispensable, all-year-round struggle against waste. With its clinics, skits, rallies, demonstrations and special messages, the month partakes something of the revival meeting; it seeks to strengthen will and purpose. The techniques of this mass evangelism are improving every year, in this paper's view, as the amount of oratory decreases and the proportion of group discussion grows.

The heady excitement of winning converts to the loss and damage cause, nevertheless, ought not to obscure the plain fact that the operation of a railroad business cannot be tailored to suit (1) the nature of the equipment available, plus (2) the proneness of that equipment to contents damage.

Every so often somebody declares himself to the effect that "the reason we have so much more damage than in 'the old days' is because we load the cars heavier and run longer trains much faster." President David E. Smucker of the special-equipment pioneering Detroit, Toledo & Ironton rejects any such nostalgic, backward glance as wholly unrealistic. In a recent talk to the New York Security Analysts, he observes:

"It is through heavier loading of cars and trains that we are enabled to pass on our correspondingly lower costs to our shippers and consignees in the form of lower freight rates particularly applicable to heavier loads. It is futile even to suggest that damage—or the expense of preventing it—could be minimized if we didn't load the cars so heavily or didn't handle so many cars in a train.

"That point of view simply ignores the basic economic advantage which we possess, and I think it is apparent that we must continue to have freight loaded and secured in such a manner as to withstand not only switching impact, but slack closures and stretchouts which have become more troublesome with the longer trains and higher speeds enabled by the introduction of diesel locomotives.

"We have been conducting a campaign of education to reduce both switching and road impacts, but I have been around too long, have heard too many cars 'ring up' in classification yards and have been thrown from one end of a cabin car to the other too many times to have any real hope that we will ever entirely eliminate impact as an element in railroad freight transportation. Other means must be sought to overcome our inherent disadvantage without sacrificing the inherent advantage which is fundamental and basic."

The shipper cannot be enlisted to undergo more expense than he now does in protecting his shipments. Packing and loading requirements incident to railroad transportation are, for some commodities, already too onerous. The railroads' most dangerous competition is not that of common carrier truckers—who have their own lading-damage troubles—but from private or contract transportation, where the freight moves under constant, shipper-controlled surveillance.

Evangelism will not take the place of an abundant supply of tight, abrasion-free freight cars, with modern shock-absorbing running gear and load-restraining fitments. Railroading is that kind of business.

Why Not Useful Car Numbers?

Is it not the time for the railroads to study a national system of freight car numbering which will describe the car—not just count it? If a new system of numbering were to be applied only to the nearly 150,000 new cars on order, and the 50,000 cars expected to be ordered in the near future, a real start will have been made toward a car fleet that can be identified quickly as to primary type and character.

Although the details of such a digit plan may be formidable, the basic formula is simple. For every type of car there should be set aside a range of exclusive numbers, the range being large enough to encompass the total ownership of that class by any one railroad in the foreseeable future. In a plan of this type recently considered by the railroads' officers, for example, the numbers 81000 to 90999 (covering a possible total of 10,000 cars) were set aside for single door box cars, 50 ft or more, but less than 60 ft in inside length. Similar ranges were reserved for box cars by varying door arrangements and lengths, as well as for separate classes of other closed and open-top cars. The plan is reported to have been turned down, presumably because it "did not go far enough" to justify the cost of restenciling cars and revising records.

Now when so many new cars are in the works, it looks like a good time to get together on a plan that will earn its salt. Perhaps to car type, size and door arrangement, there could be added information about door size and other variables of interest to car users.

Quick, accurate identification of classes of cars is needed by yardmen, local freight crews, car repairmen, agents, chief dispatchers and car distributors, among others. The customers are becoming increasingly fussy about what they order—and what they get. Giving that information automatically and at a glance is a sure way of cutting down maldistribution and wasted miles and moves.

Does Your Pay Match Your Job?

Executive salary administration, based on systematic job classification, offers management opportunities to improve personnel relations and to strengthen organizational structure, while bringing wage levels into balance

By **FRED J. KNIGHT**
Assistant to President, Fred Harvey
and **W. J. PEDICORD**
Management Consultant
Cresap, McCormick and Paget

It is hardly possible to overemphasize the importance of acquiring and maintaining the highest possible grade of executives and supervisors at all levels of any organization. In spite of the obviously tremendous strategic importance of getting high quality executives and keeping them satisfied with their jobs and their opportunities, it is a curious fact that many companies have done relatively little to ensure systematic administration of salaries and of job opportunities for executives and supervisors.

The basic reason for systematizing executive compensation is that it helps to obtain superior management of a company's affairs. As mentioned in Railway Age, July 18, 1955, this influence is felt in several ways:

- Superior executives are attracted and retained.
- Motivation is improved.
- Better organization is obtained, i.e., a more efficient basic structure and improved initiative and cooperation.

Systems of salary administration may take any one of several forms, and different systems may employ a surprising variety of procedures. The best system for a given company is one which is designed (1) to meet the needs of that company, and (2) to operate to the best advantage considering the circumstances under which that company operates.

Different companies, even in the same industry, vary in size, degree of decentralization, and types of organizational structure, as well as in their general aims and policies. It is natural, therefore, that wide differences are found among salary administration and executive development plans. Most of these differences, however, are in detail and in procedure, rather than in basic approach.

The usual direct objectives of a salary administration plan are:

1. To establish and maintain equitable salary relationships (a) among all executives within the company, or those within the scope of the plan, and (b) as regards salaries being paid by other companies to executives of comparable ability.

2. To offer incentive for improving performance (a) by relating the salary of the individual to his demonstrated competence on the job, and (b) by helping the individual to see how he can improve his performance and earn advancement.

Accomplishment of these objectives requires two kinds of evaluation, commonly called "job evaluation," and "personnel appraisal." The first is the process of rating the job, and the second is the process of rating the individual.

In job evaluation, each job is identified and compared with others, and equitable pay rates are established for each job. Systematic salary administration may be carried no further than to establish a flat salary rate to apply to each job; in which case everyone working on the same or an equivalent job would be paid exactly the same salary.

But it is often unsatisfactory to pay everyone on a given executive job the same salary. There are obvious differences in worth between a beginner and an experienced man; or between an experienced man whose performance is only just average, and one whose performance is outstanding. To compensate for such differences, many companies establish a rate range instead of a flat rate for each job. The rate range may be subdivided into a number of steps, the low rate being for beginners, the maximum rate for extraordinarily good performers, and the intermediate rate for the others.

"... It is often unsatisfactory to pay everyone on a given executive job the same salary. There are obvious differences in worth between a beginner and an experienced man; or between one experienced man whose performance is only just average, and one whose performance is outstanding. To compensate for such differences, many companies establish a rate range instead of a flat rate for each job. ..."

Personnel Appraisal

Job evaluation may be employed alone as a first step toward improved salary administration, or in a limited situation calling for little refinement. Personnel appraisal also is needed when differences between the performances of individuals are to be recognized, or when the system is to be used also as the basis of a personnel development program.

This article is concerned primarily with actual techniques and pro-

cedures which have been employed successfully in job evaluation. Because of the great diversity of the needs and of the circumstances of different companies, it should be pointed out that the particular forms and procedures presented here do not necessarily represent the answer to the problems of a particular company. It is hoped, however, that the material presented will serve as a tangible introduction to the subject.

The process of evaluating executive jobs and establishing specific rates may be divided into four distinct steps.

1. *Job ranking*—determining the relative rating of each job as compared with others.

2. *Establishing job grades*—a system for classifying similar jobs together to simplify the work of administration.

3. *Setting a salary range* for each job grade.

4. *Establishing salary steps* within each job grade.

Job Ranking

In comparing one job with others to determine its fair relative rating, it is helpful to regard each job from several points of view, so as not to overlook any important characteristic. An appraisal based on close examination of several significant factors is likely to be more reliable than an overall opinion. Many different factors might be suggested as significant indexes to the relative value of different positions. A plan in use by one company uses six factors weighted as follows:

Factor	Approximate Percentage Weight
Knowledge required	20%
General complexity of job	30
Responsibility for profit and control	15
Management responsibility	15
Personal Contacts	15
Job conditions	5
	100%

The requirements of each executive position would be considered, and the job would be graded on each of these factors independently, to arrive at a total score. This process may be refined to whatever degree is thought suitable. Guide books or instruction manuals may be produced to provide an accurate definition of each rating factor, and to clarify the procedures and policies which are to be followed.

Safeguards against inaccuracies of individual judgments may be provided by having more than one individual judge each job and having the differences reconciled by other parties, such as an experienced consultant or a representative of the personnel department. The final scoring of all jobs is usually subjected to review and approval of a committee of executives drawn from several departments of the company. The purpose of this step is to assure that the interpretation of factors and the procedure of ranking jobs has been accomplished in a uniform manner fair to all concerned.

Completion of the ranking process results in a straight comparative ranking of all executive jobs, in the order of their relative worth. It would be possible at this point to establish cash values for each job, according to its percentage point ranking. In a large company this would result in a large number of different rates, and this would be awkward to administer. Usual practice is, therefore, to group together jobs of approximately equal percentage rank and to establish salary ranges governing the groups.

The number of groups needed for satisfactory classification of jobs varies with circumstances. One large railroad after careful study decided to employ 18 grades in its operations and maintenance department. An accompanying tabulation shows how a few positions were classified according to this scale. Note that the relative rankings of positions bearing similar titles on other railroads would not necessarily be the same, since the job content may vary.

Rigidity should be guarded against in any compensation plan. The job content of any particular position, for example, may change as new methods are introduced or changes are made in the organizational structure. When this happens, the job should be restudied and re-evaluated, and this may lead to placing it in a different position grade. This should be made clear to all from the beginning, as otherwise some employees will assume they have a vested interest in a particular job title.

Determination of the most suitable number of salary grades, and of the proper grade for each job, requires application of judgment. The more experienced and capable men in a lower-graded job may be worth more than beginners in the next higher-graded job. There should be, therefore, some overlap between the salary ranges of adjacent salary grades.

A pay raise of a given amount of dollars has less significance to a higher-paid man than to a lower-paid man. Hence salary steps and pay increases should rise by equal or rising *percentage* steps. In industrial and commercial practice a 30%

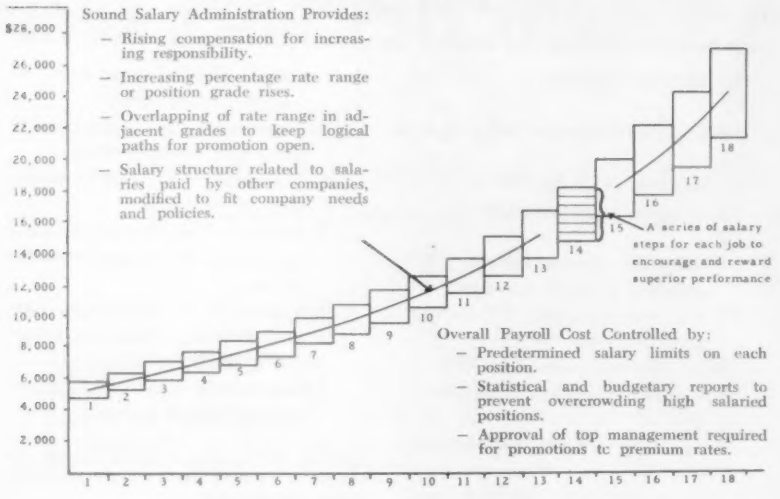
A TYPICAL JOB CLASSIFICATION SCALE

HOW OPERATING JOBS ON ONE RAILROAD DISTRICT ARE FITTED INTO 18 POSITION GRADES

18 General manager
17
16 Regional manager "A"
15
14 Regional manager "B"
13 General superintendent "A"
12
11 General superintendent "B," assistant general manager
10 Regional manager "C," division superintendent "A"
9 Division superintendent "B"
8 Assistant division superintendent "A"
7 Assistant division superintendent "B"
6 Supervisor of stations and motor service, supervisor of freight transportation
5 Trainmaster "A," supervisor of passenger transportation
4 Trainmaster "B," district supervisor of contracts
3 Assistant trainmaster, assistant supervisor of freight transportation.
2 Supervisor of demurrage, supervisor of car utilization, supervising agent "A"
1 Supervising agent "B," supervisor of freight service.

Positions of like responsibility and worth are classed in the same position grade to simplify salary administration.

OBJECTIVES OF SALARY ADMINISTRATION


Sound Salary Administration Provides:
– Rising compensation for increasing responsibility.
– Increasing percentage rate range or position grade rises.
– Overlapping of rate range in adjacent grades to keep logical paths for promotion open.
– Salary structure related to salaries paid by other companies, modified to fit company needs and policies.
A series of salary steps for each job to encourage and reward superior performance
Overall Payroll Cost Controlled by:
– Predetermined salary limits on each position.
– Statistical and budgetary reports to prevent overcrowding high salaried positions.
– Approval of top management required for promotions tc premium rates.
$26,000
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

range is often provided at the lower steps, with the percentage rising gradually to 50% at the top. Narrower ranges are, however, the rule among public utilities.

Salary Ranges

A typical salary structure is shown in the accompanying chart. The position grades are here arranged in rising salary steps along a curved line representing the guideline of compensation which the company had decided is the right one for its use.

Several factors are considered in determining this guideline. It is common practice to survey the salaries being paid by other companies in the same industry, and in other industries. In making such a survey, extreme care should be taken to assure that job contents and not merely job titles are truly comparable.

Company policy should be clarified as to whether the objective is to pay salaries on a par with those obtainable outside, or to pay salaries somewhat above or below the outside normal. Either policy may be entirely sound for a particular company. Some companies, especially in new industries and for key jobs, plan to pay above-average salaries in order to attract experienced people from outside. In the more settled industries it is often found that stability of employment and an opportunity to rise through the ranks are better inducements than premium salaries.

It is often found, after determination of the desired salary guideline, that the guide differs little from the existing average pay schedule. Wide discrepancies are rather rare. If discrepancies are small, a new salary schedule based on the new position classification may be adopted immediately. In case discrepancies are large, several years may be required to close the gaps.

In our inflationary era, and because national productivity and real income are rising, the entire salary curve drifts gradually upward. This upward drift makes it possible, as a rule, to close even large gaps within a few years. In this way a rational and systematic salary schedule can be achieved gradually with little or no increase in overall payroll cost.

The maximum and the minimum salaries established for each position grade apply alike to all jobs which are classified in that grade. The salary of each individual should be set, within the range of his position grade, according to his own worth.

For purposes of orderly and efficient administration it is convenient to divide the salary range of each position grade into perhaps five or six steps. The bottom step would carry the minimum rate of the position grade, and the intermediate steps would carry rising rates up to the maximum. The accompanying tabulation shows a typical example.

In this instance, a salary spread of 30% is divided into six steps, with a spread of $60 a month between steps. Each of the other position grades would be similarly subdivided. Criteria are established for defining each step and assuring uniform interpretation and application of rules and procedures for rating each individual to determine the salary step at which he properly belongs.

As the salary bracket rises above say $15,000, an increasing degree of flexibility is advisable in salary administration. Flexibility is needed both because precision in evaluation at these levels becames more difficult, and in order to allow leeway for handling exceptional individual situations. For example, it may be advisable temporarily to go outside the usual step or percentage limitations in order to meet a particular situation. Such special handling should be permitted, of course, only with approval of top management.

Many persons, when rating others, find it difficult to escape being influenced by sympathy and optimism,

SALARY STEPS FOR ONE POSITION GRADE

(Corresponding to Grade No. 9 on Typical Job Classification Scale)

Step	Monthly Salary	Definition
1 Minimum	$1,000	For beginners
2 Intermediate	1,060	For passable performance
3 Standard rate	1,120	For wholly satisfactory performance
4 Above standard	1,180	For above standard performance consistently demonstrated over a period of time.
5 Superior rate	1,240	For oustanding performance demonstrated over a long period of time.
6 Maximum rate	1,300	

resulting in rating too many people at high levels. This defeats the purpose of systematic rating, which is to recognize and reward differences in performance. Precautions are necessary to assure that the top steps are reserved to reward really exceptional individuals. Advancement to these steps should require review by top management. Statistical and budgetary type controls also may be used to safeguard against unreasonably large numbers of individuals being classed at the premium salary steps.

Possible Objections

A management when considering adoption of a new system is quite properly inclined to be cautious. Questions such as the following are likely to be raised:

1. Isn't the "halo" effect a danger in ratings of this kind?
2. Won't such a system create too much excitement over salary increases?
3. Doesn't this take a lot of time of our line executives away from their regular work?
4. How much does such a system boost payroll costs?
5. How do we know that each department will rate its jobs (or its people) alike?
6. How can a system for rating jobs and people improve the organization structure?

It is not to be presumed that any salary administration system will achieve perfection or work effortlessly. As with other kinds of work, however, a systematic procedure well administered can produce a better result, and probably at lower cost, than can be secured by unplanned, haphazard methods.

It is true that a favorable impression created by one or a few features may create a "halo effect" which inclines toward giving an unduly high overall rating to a job (or to an individual). But this effect is present in an informal system also, and is not exaggerated by systematic approach. A good system, in fact, diminishes the halo effect by providing for thorough analysis of several carefully defined factors, instead of reliance on an overall impression.

The halo effect also is reduced by having a committee review the ratings, instead of placing uncritical reliance on the recommendation of one individual.

". . . It is not to be presumed that any salary administration system will achieve perfection or work effortlessly. As with other kinds of work, however, a systematic procedure well-administered can produce a better result, and probably at lower cost, than can be secured by unplanned, haphazard methods . . ."

Intense interest in his salary always will be a natural characteristic of the average employee, but a systematic rating procedure need not exaggerate it. On the contrary, realization that his personal situation is receiving adequate and fair consideration calms the individual. Straightforward discussion of this subject releases anxieties and frustrations. This is particularly true if the personnel appraisal system is used in connection with a personal counseling procedure to aid ambitious employees by showing them how to qualify for advancement.

The operation of a system does require some executive time in appraising jobs and individuals, and in serving on the reviewing committee. The function of appraising jobs and individuals is, however, essential in order to determine fair salaries, raises, and promotions. A regularized scheduled procedure need take no more time than a haphazard one.

Lacking a good system, there is danger that the pressure of day-to-day events will result in many line executives giving too little attention to the executives under their jurisdiction. A systematic procedure helps to prevent neglect of the vital function of giving personal recognition and helping the personal development of the younger executives, who will some day assume higher responsibilities.

Usual experience is that few individual salaries are found to be outside the range established for the proper position grade. The cost of bringing a few below-standard salaries up to their fair position is nominal. Other adjustments can, if desired, be spread over a period of time, and since salaries in this country are gradually rising due to inflation and higher productivity based on scientific discoveries, equitable salary relationships can be established without increasing long-run payroll costs.

The problem of obtaining uniform and fair ratings throughout all departments of a company is ever present. Inequities are almost certain to exist if salaries are being administered informally. Since affected employees are usually aware of them, they result in a *hidden cost* in the form of disgruntled people and difficulty in filling the relatively poorly paid positions with able personnel.

A good system overcomes inequities in several ways—(1) written standards for comparison and written evaluations encourage objective analysis; (2) use of several factors which are judged separately yields more accurate results; and (3) review of findings by a committee and by higher executives encourages careful appraisal and balanced viewpoint.

Organization structure need not necessarily be affected directly by a salary administration system. It is a common experience, however, to find that the study and occasional review of job contents, which is part of the evaluation system, brings to light opportunities for strengthening the organization structure. Duplicating efforts, unnecessary procedures, and illogical combinations of duties are uncovered and are then corrected.

Thorough review of the qualifications and performances of individuals likewise produces incidental benefits. Since it results in more accurate judgments of personal abilities, it aids the selection and promotion of the most capable men to the positions where their talents can be most productive. Good salary administration thus benefits the company and the individual.

ON THE NYC AT BUFFALO . . .

What One Big Yard Will Do . . .

- Cut two-thirds off car-handling time
- Pay for itself in less than two years
- Yield other benefits to owner and shippers

For the railroad a return of 72 per cent on the investment and for shippers an estimated saving of 225,000 car-days a year—that's how the New York Central and its freight-shipping customers will share the major benefits of a $10,559,000 yard improvement project at East Buffalo.

This project, on which construction work is now in its initial stages, is the opening gun in a system-wide program of yard improvements planned by the NYC. As described by President Alfred E. Perlman several weeks ago (Railway Age, Mar. 26, p. 10) the program calls for an expenditure of $25,000,000 to overhaul three major freight yards—at Buffalo, at Youngstown, Ohio, and at Elkhart, Ind. Similar projects are planned for other existing freight facilities as part of the road's long-range modernization program. Detailed announcements of these other projects will be made as soon as studies now being conducted are completed and recommendations approved.

Five Major Objectives

Basically, the project at Buffalo will entail the construction of a large electronically controlled hump-retarder classification yard in which will be concentrated switching operations now carried on in eight scattered yards in that general vicinity, including the road's large Gardenville yard. The major objectives are:

1. To improve service to customers.

2. To develop means of reducing time required for freight-car handling in classification yards.

3. To design a new yard permitting final classification of cars in one switching operation in order to achieve economy and terminal operating efficiency.

4. To develop necessary track and signal changes to expedite movement of trains over main tracks and through yards in the Buffalo area.

5. To accomplish maximum retirement of unnecessary and outmoded facilities.

The road plans to achieve these objectives by

1. Construction of the new classification yard in the East Buffalo territory;

2. Construction of certain additional main tracks and provision for improved signaling of existing and additional tracks; and

3. Elimination of Gardenville yard, seven scattered East Buffalo yards, and conversions of the Gardenville branch into an industrial lead.

That the objectives will be achieved by a wide margin is indicated by estimates of the cost and the savings, both in dollars and in time. The estimated cost of $10,559,000 will be offset by salvage (land, track and engines) totaling $4,454,000. Thus, the estimated net cost of the improvements is $6,105,000. The estimated annual savings are $4,425,671, giving a return on the investment of 72 per cent. The estimated savings include $2,702,685 in force, $1,317,039 in per diem, and $405,947 in the cost of maintaining 126 miles of track that will be eliminated.

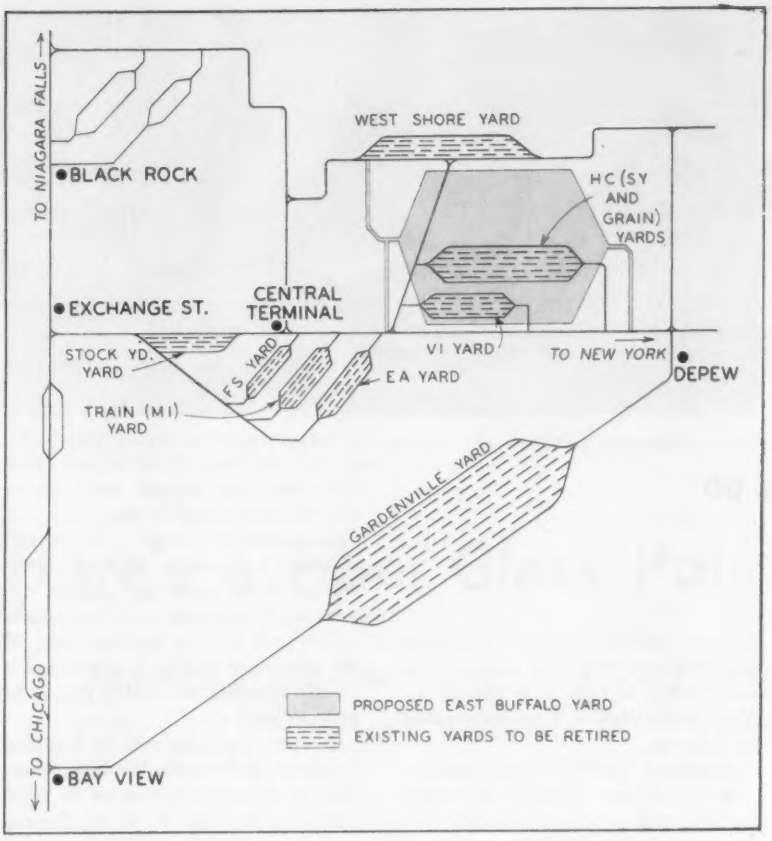
Better service for shippers will some about through a marked reduction in the time required to move cars through the proposed yard. The estimated average time for this movement is 7 hr 55 min. In contrast, the present average time required for a car to move through the yards is 21 hr 10 min for Gardenville yard and 25 hr 40 min for the East Buffalo yards.

The Present Facilities

The East Buffalo yards are at present located on both sides of the main-line tracks running between Bay View and Depew (see map). There are seven switching yards in this area. Gardenville yard is on the double-track Gardenville branch, which provides an alternate route between Bay View and Depew. The passenger terminal (Central Terminal) is on the main line in the East Buffalo area.

Seventeen scheduled eastbound freight trains arrive and depart from East Buffalo and Gardenville yards daily, of which 11 are through schedules.

The westbound movement now comprises 17 scheduled arrivals and 16 departures, in which are included 9 through trains. The same main tracks over which freight movements are made to and from the East Buffalo yards are also used by 36 eastbound passenger trains arriving



THE NEW YARD in East Buffalo will perform switching operations now done in seven existing yards in that area, and in the Gardenville yard. Improvements in main trackage and signaling will also be made, and the double-track Gardenville branch will be converted to a single-track industrial lead.

at Central Terminal and the same number westbound. Of these, 19 eastbound and 18 westbound are through schedules.

In the East Buffalo-Gardenville area the road serves 240 principal industries and has 9 interchange connections with 8 railroads. On an average day about 2,750 cars are switched to industries, delivered in interchange, and classified for road movement at East Buffalo and Gardenville, with a peak of about 3,190 cars.

How Yards Are Used

A portion of Gardenville yard is used for cleaning and conditioning cars for the loading of various commodities. Car-repair facilities, with a combined capacity of 230 cars, are located at Gardenville and East Buffalo. There are engine-servicing facilities at Gardenville, East Buffalo, the passenger terminal and Black Rock.

Gardenville yard performs virtually all of the switching of westbound trains originating in the Buffalo district, and in addition also handles through eastbound and westbound freight trains requiring no switching. Each of the seven switching yards in the East Buffalo territory performs switching of cars received from road trains, intraterminal movements and industries. Cars are normally transferred to one of the seven yards for consolidation before they depart to primary interchange points, large industries and industrial base yards.

The present East Buffalo stock yard facility has a capacity of 400 carloads of livestock. An average maximum of 50 carloads of stock are run through daily requiring no service.

In addition, an average maximum of 160 carloads of stock daily are fed and rested in the stock yard as required by law. There is also a a livestock market operation carried on involving the equivalent of 40 carloads of stock daily. This business is transported in and out of the stock yards by truck.

250 Grain Cars per Day

Present car-distribution practices result in concentration at Gardenville of empty box and open-top equipment from points east of Buffalo and the Buffalo area for commodity inspection, switching and distribution to meet car requirements in the Buffalo district and points west of Buffalo. Of the box cars received, Gardenville prepares about 250 cars per day for Buffalo district feed, flour and grain-moving requirements.

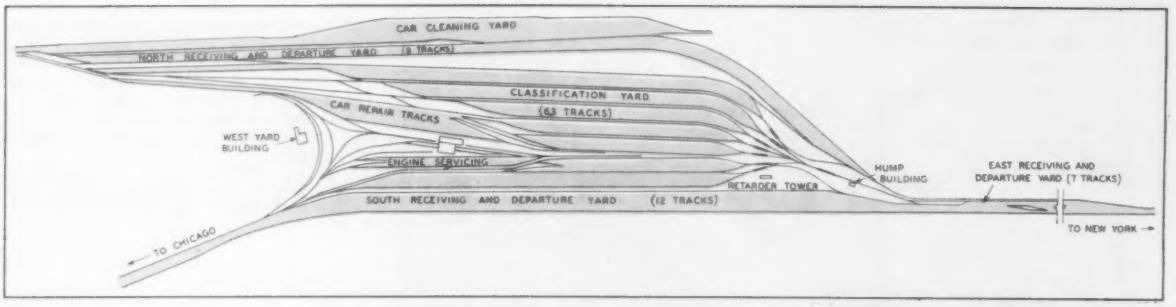
The proposed new yard in which the operations at East Buffalo and Gardenville will be consolidated will be situated north of the main tracks on approximately 170 acres of land now owned by the company. The general layout of the yard is shown in a diagram.

It is designed to receive and switch 2,000 to 3,000 cars daily. Sixty-three classification tracks will be provided in seven 9-track groups, with lengths varying from 30 to 70 cars, except that each of the three north tracks will have a capacity of 120 cars for the makeup of eastbound and westbound trains. The classification yard will have a total capacity or 3,110 cars.

Switching Procedure

Drafts of cars for switching will be moved to the crest of the hump either by straight shoves from the east receiving tracks, or by pullbacks from the north and south receiving

MORE



SEVEN GROUPS of 9 tracks each will comprise the body of the new yard. Receiving and departure tracks will be placed in three groups, each of which will serve both functions.

WHAT ONE BIG YARD WILL DO...

tracks. Seventy-eight per cent of the trains and drafts presently arriving in the East Buffalo territory have less than 50 cars, so that considerable benefit is expected to result from the pullback operation because of the ability to double two or more drafts in movements to the hump lead track.

Building Layout

A two-story building with tower, situated at the hump, will house the control panel and machines for power-operated receiving and departure yard switches in the hump area. This building will also contain a control panel and equipment for the operation of automatic switching machines.

There will also be a two-story building with tower which will house the controls and equipment for the automatic retarding system. This building will, in addition, contain the offices of the assistant general yardmaster, trainmaster, general yardmaster, east-end clerks and car inspectors, along with communication and signal-shop space. A two-story building with tower at the west end of the yard will accommodate the west-end yardmaster and clerks, car inspectors and facilities for the yard, train and engine crews. This building will contain a 59-room YMCA and cafeteria for the use of away-from-home crews.

A pneumatic tube system will connect the principal buildings in the yard, and there will be a complete communications system including talk-back speakers, yard radios, communicating signals and telephones. Yard hump lists will be transmitted by Teletype.

Auxiliary facilities will include:

- An 85-car capacity car-repair facility with adequate lighting for 24-hr operation. It is contemplated that continuous operation of the repair tracks will save one or more days in car detention in servicing both loaded and empty cars, resulting in improved service to customers.
- Facilities for servicing engines assigned in the immediate vicinity and for the inspection of all engines assigned in the Buffalo district.
- A 60-pen stock yard, located in the old West Shore Yard area, for handling in-transit feed and rest requirements for New York Central livestock. There will also be an 18-car platform for servicing in-transit carload hogs.
- A 250-car capacity car-cleaning yard for preparation of cars for feed, flour and grain-loading requirements in the Buffalo territory. This yard will be provided by rearranging tracks in the old West Shore yard.

Changes in Main Tracks

Important changes and additions in main tracks in the East Buffalo territory will be made as part of the overall project. At two different locations in the double-track territory between Depew and Bay View a third main track will be provided. Also, two new through main tracks will be constructed in the vicinity of the passenger depot to permit through movements without interference from passenger station operations. Crossovers to permit speeds of 30 mph will be installed west of the passenger station in replacement of slip switches permitting speeds of only 10 mph.

Revised signaling will be installed to permit movements in either direction by signal indication on all main tracks from Bay View to Depew, with controls from existing towers. This revision will make possible the elimination of three interlocking towers on this route. On the double-track Gardenville branch one of the main tracks will be retired and the remaining track will be converted to an industrial lead.

It is expected that, in addition to the benefits already mentioned, the improvements at East Buffalo will:

- Reduce switching requirements at other yards.
- Produce peak utilization of yard engines and road power as the result of the concentrated operations.
- Facilitate the operation of long through road trains.
- Permit faster train operations between Depew and Bay View because of the improved signal and track facilities.
- Greatly reduce potential equipment and lading damage as a result of the installation of automatic switching and retarding equipment and elimination of car rehandling.
- Make valuable real estate available for industrial development.
- Reduce car detention and provide improved service to customers through the operation of car-servicing facilities 24 hr daily.

LINEMEN ATTACH HARDWARE preparatory to installing fiber-glass crossarm. Man at left is attaching pole steps.

Here's a Fiber-Glass Pole

Lightweight, high-strength, long-life, fire-resistant, woodpecker proof product is said to warrant higher first cost on an annual basis

Last week at Alma, Mich., two linemen demonstrated the ease with which new fiber-glass poles and crossarms can be installed. Eleven of these poles have been in service for a year, and appear to be as good as the day installed.

This is the first installation of these newly developed poles. Each pole is a tube of 11 in. outside diameter with a wall ¼ in. thick. The crossarms are tubes 5 in. in diameter with wall ¼ in. thick. Poles are 35 ft long and weigh 150 lb, about a fourth of the weight of a comparable wood pole. An 8-ft fiber-glass crossarm weighs 11 lb, compared with about 26 lb for a wood crossarm. Both poles and crossarms are capped at the ends with fiber-glass discs.

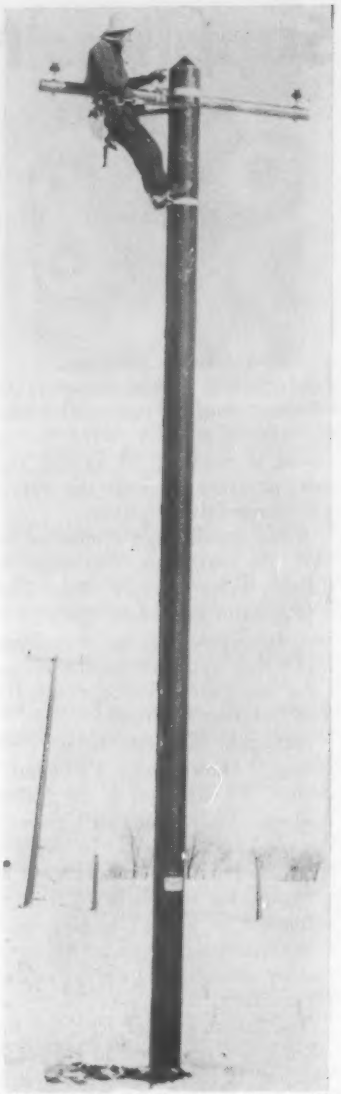
These poles and crossarms are made of a combination of materials, including kraft paper, glass fiber laminate, epoxy resin and an external film of transparent, thin, tough, cellophane plastic. The tubes and crossarms are highly resistant to shock and impact. Laboratory tests demonstrate that under such stress as strong winds the pole bends, but it returns to its original position when the stress is relieved.

This fiber-glass material is said to be immune from the effects of decay, termites and burrowing animals, and to be impervious to sun, snow, ice, water, gases or chemicals. The material is too tough for woodpeckers to damage, and nails or tacks cannot be driven into it. This material is said to be resistant to fires.

Five electrical discharges of 20,000 amperes, to simulate lightning, caused no damage to a dry fiber-glass crossarm. A sixth discharge tore a ¼-in. strip from the outer ply. One 20,000 ampere discharge on a southern yellow pine crossarm shattered it into three pieces.

These fiber-glass poles and crossarms can be sawed or drilled with hand tools. The crossarms are ordinarily applied to the poles by special metal gains applied with straps or through bolts, no braces being required. If only a single arm is to be used, it can be inserted through a 5-in. hole drilled through the pole, and bonded in position. The crossarms take standard metal pins. Because the arms are cylindrical, wire can be pulled over them with ease.

Linemen's conventional pole climbers cannot be used on the smooth exterior surface. For climbing, steps are inserted in drilled holes. Permanent steps are applied above the 8 ft line, before the poles are installed. The lineman carries detachable steps to insert in holes from the ground up to 8 ft. If permanent steps are not to be used, then a lineman carries enough detachable steps to climb.



LINEMAN STANDING ON 4-WAY pole step near top of pole. Steps are used when climbing, eliminating use of conventional climbers.

These fiber-glass poles and crossarms are manufactured by Gar-Wood Industries, Ypsilanti, Mich., and the sole distributor is the Line Material Company, Milwaukee, Wis., the trade name being "Permaline." The manufacturer states that when the demand warrants mass production the poles can be priced, in consideration of the advantages, to be a good buy.

Suppliers Now Active Allies

Role of passive friendship toward railroads abandoned for vigorous championship of industry's advancement through Railway Progress Institute

The railway supply industry, that heterogeneous and competitive group of companies which serve the railroads, is stepping off briskly on a new program to help the carriers win competitive equality.

A few months ago a move to support the railroads like this was scarcely more than an idea. Today it is a major operation. Back of this fast development is an organization which first appeared on the railroad scene less than a year ago—the Railway Progress Institute.

Although the RPI is still quite young, it knows where it's bound. It should. As successor to the Railway Business Association, RPI traces its lineage back to 1908. In every respect, however, in staff, concept and program, the RPI is new. It is now embarked on a two-fold undertaking that surpasses in scope anything previously attempted by the railway supply industry.

The initial goal of RPI, set forth when it was organized in May of last year, is "to carry forward a dynamic program on behalf of the railroad industry." This it is doing through a variety of means. Beyond this, the institute has recently opened up a new approach to its own membership. It is undertaking to create an "industry concept" among the supply companies themselves—an effort that promises some bold possibilities of its own.

In view of this revitalized relationship between railroads and their suppliers, Railway Age decided to tell the story of how RPI came into being—what the organization is, who it is and why it is. And to pick up the first traces means going back three years, to a day in November 1952. . . .

November 20, 1952: An eastern railroad president leaned across a table in his New York board room and offered some blunt words to a group of railroad suppliers. In substance his remarks went like this: "The railroads want and need the support of the supply industry and we question whether you're doing all you might. We'd like to see a vigorous organization with industry-wide membership, one that would provide us with a closer working relationship. That's our approach to this thing, and we want to know what you are prepared to do."

The president was flanked, as he spoke, by six other railroad executives. The next move clearly was up to the supply companies.

November 21, 1952: The governing board of the then-existing Railway Business Association met in New York. Pondering the previous day's meeting, and what it implied, the board voted one immediate step. It would organize local "action groups" wherever concentration of supply company personnel could be found.

Needs Are Aired

September 11, 1953: Ten months (and a lot of arrangements committee meetings) later. In New York, David I. Mackie, chairman of the Eastern Railroad Presidents Conference, addressed a joint meeting of railroad officers and suppliers. A new railroad public relations program was shaping up. Mr. Mackie told the supply men: "We're not going to harass you continually, but we're going to need your help in specific cases and we'll call on you as they

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GEARED TO PROGRESS

RPI

RPI'S CREDO

"The railway supply industry can prosper only as the American Railroads prosper;

"The railroads can prosper only if they are permitted to manage their own affairs in accord with the American tradition and to compete on an equal footing with other forms of transportation;

"Our nation can prosper only if it continues to have strong, adequate rail transportation geared to the growing needs of commerce and the national defense; and,

"The Railway Progress Institute, organized as the voice and the promotional arm of the railway supply industry and set up to aid the railroads in every way possible, is the means by which we can contribute to the welfare and security of our nation; to the progress and prosperity of the railroads; and to the growth and success of our own industry."

come up." General Counsel Joseph Hays of the Western railways and other railroad officers and public relations people told the group substantially the same thing. The need for a stronger voice on the part of the suppliers was growing.

December 17, 1953: Recognizing the problem raised by the September 11 meeting, nine supply men met around a luncheon table in New York to discuss a pro-railroad advertising campaign. Out of the meeting emerged an informal group—the Committee of Railway Suppliers. The group had no definite tie with RBA, and its formation pointed up, at least to some, a significant gap in RBA's efforts. As a result, new ideas for reorganizing RBA began to circulate.

April 28, 1954: Evidence of the groundswell: the secretary of RBA asked the vice-president of a large supply firm what he thought of the organization. The reply came quickly. "Your association," he said, "does not meet our needs." Meantime, the Committee of Railway Suppliers was quietly at work.

June 30, 1954: The "committee" kicked off its program with full page advertisements in major metropolitan dailies. Focal point for the move was a speech by Benjamin F. Fairless, then head of United States Steel. Mr. Fairless made news headlines with his "taxed to death, bargained to death, and regulated to death" speech about the railroads.

October 18, 1954: Back at RBA's Chicago headquarters, the quiet move to reorganize the association picked up momentum. Returns were in from a survey among the membership. The survey was docketed for the next meeting of the Governing Board.

November 8, 1954: Suddenly, a smoldering fire burst into flame. Robert R. Young, chairman of the New York Central since May, was considering whether or not the New York Central would retain its full membership in the Association of American Railroads. Meantime, the C&O was considering whether or not to rejoin the AAR on a full-fledged basis. When the C&O withdrew from full membership in AAR some years previously, Mr. Young had organized the Federation for Railway Progress. It was hardly to be expected that a railroad or group of railroads would be principal supporters of the federation and, at the same time, be full-fledged participants in the AAR's public relations programs.

E. O. BOSHELL, chairman and president of Westinghouse Air Brake Company, currently serves as chairman of RPI. A 33-man Governing Board sets policy for the Institute.

RPI PRESIDENT HOLCOMBE PARKES has headed the organization since mid-1955. He has helped shape RPI's positive program for support of the railroads.

It seemed to make much better sense for FRP to become entirely independent of corporate railroad support—and into this situation stepped 36 supply companies, pledging $125,000 needed to take the place of corporate railroad contributions which otherwise would have completed FRP's 1955 budget. An 8-year-old schism within the railroad industry thus was healed, and the perceptive action of these 36 suppliers undoubtedly was very helpful in encompassing the achievement of this renewed understanding.

November 18, 1954: While the drive for money to support FRP was still under way, and pushing toward obvious success, RBA's Governing Board took a well-thought-out step. It set up an 11-man committee to study its own reorganization. As Lester N. Selig put it, "We must reorient, reorganize, restaff and refinance the RBA in order to properly serve the railway supply industry and make constructive contributions to the railroads."

Peace in Two Weeks

November 19, 1954: Less than two weeks after setting out to rally financial aid for FRP, the drive was over. This day it was official. At a meeting in New York, William T. Faricy, Walter J. Touhy and Robert R. Young issued a joint statement signifying they had successfully concluded their efforts to reach a common understanding. Peace was restored to the railroad industry. RBA could begin developing a working relationship with FRP. At the same time it had to get on with its own reorganization. That job was hardly begun.

December 7, 1954: RBA's reorganization committee held its first meeting, talked change, then selected four candidates to represent the supply industry on the new Executive Council of FRP. Three weeks later, the FRP made the slate public. James G. Lyne, president of Simmons-Boardman Publishing Corporation, was elected FRP chairman. Other members representing RBA: C. P. Whitehead, E. O. Boshell and Lester N. Selig.

April 15, 1955: Three months pass, and plans for "reorienting and reorganizing" RBA are finished. M. N. Trainer, chairman of the committee, delivered the blueprint of change to RBA in Chicago. The report, in short, recognized the challenge made in that railroad president's office more than two years earlier. It called on the supply companies to assume a leading role in fostering enlightened public attitude toward the railroads "not only because the public interest will be served, but also because our own history can prosper only in proportion to the railroads' prosperity." The stage was set; now it was just a matter of time.

RBA Gets Reorganized

May 5, 1955: RBA's Governing Board met in Chicago and received the report of its organization committee. The board liked what it heard. In less than 90 minutes the report was approved and was ready

for submission to all RBA members. Things were moving faster.

May 19, 1955: Day of decision. The association, assembled in Chicago for its midyear meeting, heard Samuel Littlejohn move for adoption of the reorganization report. With the bang of a gavel, RBA passed from existence and in its place emerged a new organization with a new approach, new ideas and a whole new job. The Railway Progress Institute was born. Later that day, E. O. Boshell and C. L. Heater were elected chairman and vice-chairman. Now to find a president and build the membership.

June 10, 1955: RPI's Executive Committee met and tallied up 11 new members. It enrolled, too, the 36 companies that had rallied to support FRP seven months earlier by absorbing their FRP underwriting commitments. Then it interviewed another in a long list of candidates for president. On this man would hinge the development of RPI's expanded program. It was a big step.

July 5, 1955: Holcombe Parkes, public relations executive and former railroad officer, arrived at Chicago to begin a challenging new job—president of RPI. Membership this day stood at 44 companies. The build-up, considering a drastic change in the dues structure from RBA, was proceeding on schedule.

July 27, 1955: "Gentlemen, I am neither a magician nor a medicine man." The new RPI president was talking to his Executive Committee, and talking sense, too, because he added that any real success the institute might enjoy would stem from a program "soundly conceived, thoroughly blueprinted and adequately tested." It will, he said, take time. "Your customers, the railroads, are moving ahead; with this institute the suppliers have set themselves to move apace. Let's go!"

Epilogue: Since that day last July, RPI has been "going." Today, the institute has 90 members. It is continuing, in 1956, substantial financial support of FRP. It has come forth, in less than a year, with a comprehensive plan of action and is cooperating closely with the rail carriers in their program of public education on the Weeks Report. It is planning

(Continued on page 40)

Railroading | After Hours

How Investors Gage Managements

by James G. Lyne

Editor Railway Age

The investment bankers and counselors, who put millions of their own and other people's money into industry, do not base their judgments wholly on analysis of figures. At a Newcomen Society affair recently, I sat next to one of these fellows, who talked freely and informatively about his business. The substance of what he said was this:

"I judge the management of a company primarily by the treatment I get from its employees with whom I have dealings. If employees are dependably well-informed, courteous and alert—that is a result that didn't just happen. Management had to plan, train and supervise to bring it about. If service from employees is frequently substandard, then that is a result that didn't just happen either."

This investor went on to praise several companies for the uniform alertness of their employees — among them. Bell Telephone and American Airlines. He was somewhat less than enthusiastic about the service of "the railroads."

You will note that he grouped "the railroads" all together. I mentioned to him the names of several individual railroads and asked him whether he did not consider that their service standards were acceptably high—but he wasn't willing to discuss railroads individually. He bunched them together, as if they were all one company. Because of the interline nature of a large part of railroad traffic, the customers are likely to characterize the whole service in terms of the least acceptable part of it.

This is another one of the many things that make cooperation by the railroads so important. If a customer were well served, or otherwise, at one department store, he'd never think of attributing such good or bad service to all department stores. But that's the way he's usually inclined to pass judgment on railroad service.

This Newcomen affair, incidentally, was held in honor of the Pittston Company and Joe Routh, its chairman, who was the speaker. He told a heartening story about the coal business—how, from being many years on the downgrade, it has now "made up its losses from railroad dieselization and the use of oil and gas for domestic heating;" and is once again moving upward, with a flourishing future in prospect.

How Coal Has "Come Back"

He ascribed the turnabout, primarily, to growing demand from the utilities, the steel industry and the export market; and to the intensive mechanization of the mines, enabling them effectively to combat inflationary increases in costs. Probably there's more than a little in the experience of the coal people that would be helpful to the railroads—and, fortunately, the coal business is one a good many railroad men know a lot about.

One thing disturbing about coal is the tendency of so many big coal users, either to locate right at the mine shaft, or else somewhere along a river where toll-free barge service is available. This in spite of the fact that, all costs considered, energy can usually move cheaper by rail in the form of coal than it moves over a wire as electric current; and more economically than the same coal can move by barge.

"CHOW LINE" files past this counter in B&O bar car when in use to feed service personnel in mass troop movements. Similar arrangement is rigged in standard cars by lining up tables to form counter for troops.

Soda Pop or Pork and Beans?

. . . B&O BAR CARS ARE GOOD FOR BOTH

Applying "chow line" procedure, the Baltimore & Ohio has devised a way to feed troops in mass movements that is both thrifty and popular. Confronted by a cut from $5 to $3.50 in the payment for a day's meals for a serviceman, the road tested its two so-called bar cars in a series of movements last year.

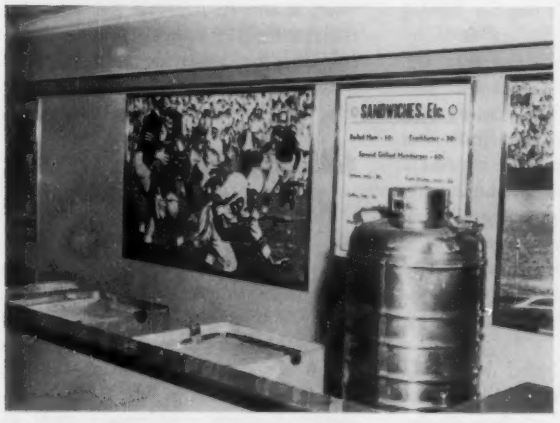
Encouraged, the B&O tried using standard dining cars cafeteria-style and found it reduced labor costs and also pleased the Defense Department and individual soldier with quick service and ample meals.

The B&O bar cars are old dining cars with seats and tables replaced by a counter. Hamburgers and soda pop are normally served to travelers going to horse races or other sports events and the cars are appropriately decorated.

The system is set up in regular dining cars by folding side tables out of the way, stacking chairs in a corner and lining up the larger tables as a counter. Meals are served across the counter—food is kept hot with "canned heat" devices—as the men file past. They return to their troop cars to eat and discard disposable utensils and trays in coated paper bags provided in each car.

The B&O says it can feed 800 men a day's meals in such a car in less than 2½ hours while three or four cars would be needed to provide standard service to that many passengers.

The technique has also been used in feeding non-military groups traveling to conventions or sporting events at excursion fares and the B&O is reported considering remodeling two more dining cars for bar car service.



HOT FOOD is kept hot in insulated beverage container and aluminum commissary hampers (shown in counter recess) with use of "canned heat" devices.

SPORTS MOTIF characterizes decoration of cars normally used to bring fans to race tracks and ball games but now found ideal for convention travelers and troops.

WIDE DOOR box car was converted from a standard Seaboard car that had 6-ft doors originally. The 20-ft opening on each side is now covered with two 10-ft doors.

FORK LIFT HANDLING, possible with the 20-ft openings on each side, has greatly reduced loading time and permits the bundling of lumber prior to shipment.

MEETING A TOUGH PROBLEM BROADSIDE . . .

20-Ft Doors Speed Lumber Loading

Seaboard rebuilds 40-ft box car to make it possible to handle lumber with a fork-lift truck

The Seaboard Air Line has rebuilt a box car, equipping it with doorways 20-ft wide. Designed for carrying finished lumber in strapped packages, this car completed its first loaded service run recently with a performance that indicates its design may have an important place in future movement of such ladings.

Appeals to Shippers

The car has two 10-ft interlocking steel doors on each side. One pair is located diagonally across from identical doors on the opposite side of the car. This arrangement could revolutionize methods of shipping packaged lumber by rail because its design permits the simultaneous opening of one-half of each side of the car for fork-lift truck handling. This free access to the car's interior greatly expedites loading and unloading, reducing costs for shipper and consignee.

The car's test run was from Franklin, Va., to Wickliffe, Ohio, over the Seaboard, Pennsylvania and Nickel Plate. The car was rapidly loaded in Franklin.

The lading arrived in good condition at Wickliffe where unloading was accomplished quickly and easily using a fork-lift truck.

Further study of the design may indicate that doors can be made as wide as 25 ft on each side. With the present 20-ft doors packaged lumber as long as 32 ft can be loaded by a fork-lift. The lading is completely protected from the weather.

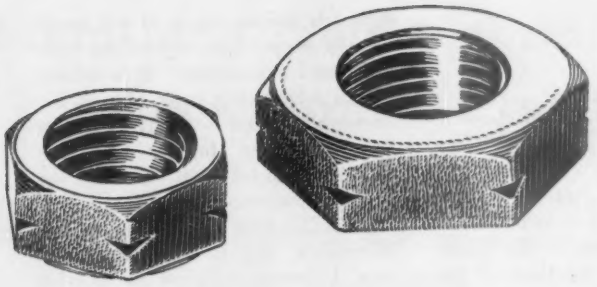
The successful performance of this car on its first run has created real interest. It could be the first of a new type of box car built expressly for the movement of finished packaged lumber. Study is continuing on how well the wide doors lend themselves to this type of service, and whether there can be any improvement of the design. The car is now in regular service.

The car was designed by E. L. Cook, Seaboard mechanical engineer. Work was started last fall at the Seaboard's Portsmouth, Va., shop. The car was rebuilt from a standard 50-ton 40-ft 6-in. box car which had single sheathing and 6-ft doors.

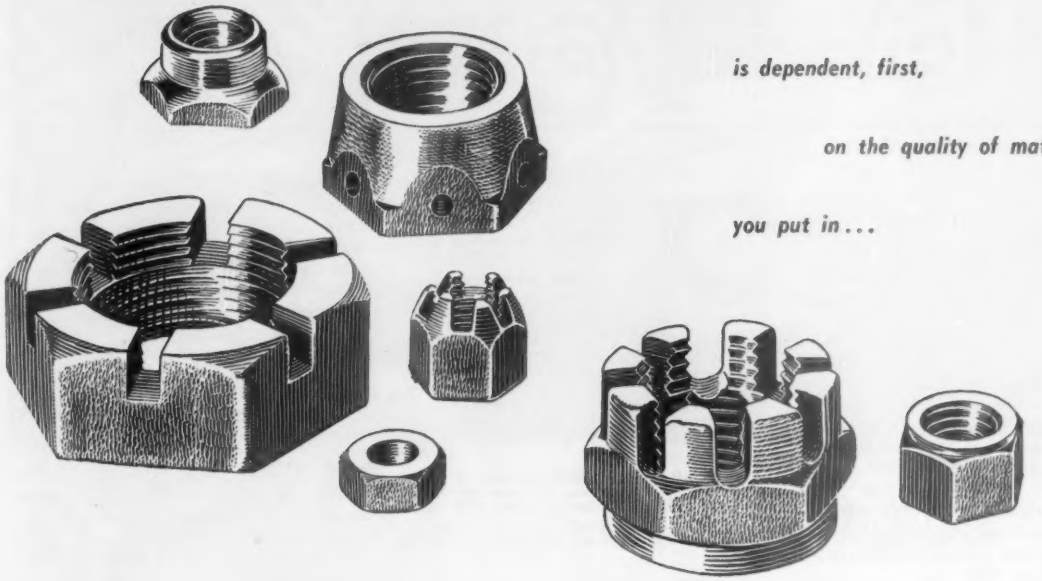
The car was converted to a steel-sheathed, wood-lined type during rebuilding. The new doors were constructed by the Youngstown Steel Door Company. The center door rolls back on its own track alongside the fixed section of the car's side. The end 10-ft door then is rolled back on a separate track parallel to the center door section. This provides a clear open space of 20 ft for loading and unloading. This arrangement made it possible on the first run to reduce loading and unloading time by approximately 36 man-hours. It is believed that even greater time savings are possible.

Saves Time

On its initial run the car carried 25,000 board ft of 16-ft kiln-dried dressed pine packaged in units weighing from 3,300 lb to 7,260 lb. The shipment, made by the Camp Manufacturing Company at Franklin, was stacked in position in about 70 minutes with a lift truck. Normally, loading a shipment such as this, board by board, would require from 16 to 18 man-hours.



the quality of product you get out of a machine –



is dependent, first,

on the quality of material

you put in . . .

The expression, "mass perfection", might well be applied to nuts of the quality illustrated above. Some are simple, others complicated. But, all bear the unmistakable mark of quality—a mark inherent in the products produced from Youngstown Cold Finished Bars.

There are no stringy chips to get caught in the cut-off blade on an automatic; they're small and break off easily. In fact, you can eliminate most grinding operations.

Youngstown Cold Finished Bars have that desirable uniformity and machineability. They are free of injurious seams. Cracked steel rarely turns up. If you use automatics, it will pay you to get in touch with your nearest Youngstown District Sales Office.

QUALITY YOUNGSTOWN SERVICE

Youngstown Cold Finished Bars

THE YOUNGSTOWN SHEET AND TUBE COMPANY *Manufacturers of Carbon, Alloy and Yoloy Steel*

General Offices Youngstown, Ohio District Sales Offices in Principal Cities.

SHEETS - STRIP - PLATES - STANDARD PIPE - LINE PIPE - OIL COUNTRY TUBULAR GOODS - CONDUIT AND EMT - MECHANICAL TUBING - COLD FINISHED BARS - HOT ROLLED BARS - WIRE - HOT ROLLED RODS - COKE TIN PLATE - ELECTROLYTIC TIN PLATE - BLACK PLATE - RAILROAD TRACK SPIKES - MINE ROOF BOLTS

RPI . . .

(Continued from page 36)

its own program in this direction. It is integrating the supply industry into the Community Relations Program of the ERPC, as well as in programs of other railroad associations. It has sponsored its traditional "dinner" at the time of the annual Member Road meeting of the AAR, following a long-established custom of its predecessor, the RBA.

RPI is reaching out into new fields, too, like helping the various railway equipment associations to capitalize on the promotional value of supply exhibits to further the recruitment of young engineers for the railroads and suppliers. It will speak for the supply industry before congressional committees. It is setting up an advertising copy service for its members, and is functioning as a "clearing house" for the dissemination of useful information within the supply industry.

At RPI's first annual meeting last November, the institute elected a new Governing Board to provide equal representation for small and medium-sized companies. A Resolutions Committee, another "first" for RPI, called upon the supply industry to assert itself on such matters as the supply and financing of freight cars and the stockpiling of railway equipment by government. These undertakings are now being progressed by special RPI member committees, as is the program of supporting the railroads in their battle for new freedom.

AAR President William T. Faricy spelled out railroad reaction to the new RPI at the institute's annual dinner last fall. "You, by your effort and the strengthening of your staff, are moving ahead in cooperation with us," he said. "We are confident that out of this newer, closer and stronger relationship will come greater days for the railroad industry and for those who supply it."

The railroad supply industry has moved a long way since November 20, 1952. As RPI likes to put it today, the suppliers now are "Geared to Progress."

Financial

(Continued from page 20)

Haven will be asked, at the April 11 annual meeting, to approve issuance of up to $27,020,000 of new equipment trust obligations to finance about 75% of the purchase price of 120 diesel-electric locomotives (Railway Age, Feb. 6, p. 9). Common and preferred stockholders will be asked to consent to issuance of $15,000,000 of promissory notes and $4,500,000 of additional flood loan notes. The road now has outstanding $10,000,000 of 4¼% ten-year flood loan notes backed by a government guarantee (Railway Age, Jan. 23, p. 46).

Dividends Declared

ATCHISON, TOPEKA & SANTA FE.—$1.25, quarterly, payable June 1 to holders of record April 27

ATLANTIC COAST LINE.—5% non-cumulative preferred, $2.50, semiannual, payable May 10 to holders of record April 25.

BANGOR & AROOSTOOK.—common, 60¢, payable June 30 to holders of record June 7.

BESSEMER & LAKE ERIE.—$1.50 preferred, 75¢, semiannual, paid April 1 to holders of record March 15.

BOSTON & MAINE.—5% preferred, $1.25, payable April 6, June 29, September 28, December 28, to holders of record April 2, June 15, September 14, December 14.

CAROLINA, CINCINNATI & OHIO.—$1.25, quarterly, payable April 20 to holders of record April 10.

CHICAGO GREAT WESTERN.—common, increased, 35¢, paid April 6 to holders of record March 26; 5% preferred, 62½¢, quarterly, paid March 30 to holders of record March 26.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—$1.50, increased, paid April 6 to holders of record March 24.

NEW YORK CENTRAL.—50¢, quarterly, payable June 9 to holders of record May 16.

NORFOLK & WESTERN.—4% adjustment preferred, 25¢, quarterly, payable May 10 to holders of record April 12.

PITTSBURGH & LAKE ERIE.—$1.50, quarterly, payable April 14 to holders of record April 2.

PROVIDENCE & WORCESTER.—$2.50, quarterly, paid April 2 to holders of record March 19.

READING.—50¢, quarterly, payable May 10 to holders of record April 12.

ST. LOUIS SOUTHWESTERN.—$5, annual, paid March 30 to holders of record March 26.

SPOKANE INTERNATIONAL.—extra, 30¢; quarterly, 30¢; both paid April 2 to holders of record March 16; quarterly, 30¢, payable July 2, October 1, December 14, to holders of record June 15, September 14, December 3.

TEXAS & PACIFIC.—common, $1.25, quarterly; 5% non-cumulative preferred, $1.25, quarterly; both paid March 30 to holders of record March 26.

VERMONT & MASSACHUSETTS.—$3, semi-annual, paid April 7 to holders of record March 29.

WHEELING & LAKE ERIE.—common, $1.43¾, quarterly; 4% prior lien, $1, quarterly; both payable May 1 to holders of record April 13.

Supply Trade

Maskell E. Brown has joined **Copperweld Steel Company** as sales engineer in eastern Pennsylvania, New Jersey and New York City.

Wayne J. Berry, manager at Memphis, Tenn., for **Graybar Electric Company,** has been named Southeastern district manager at Richmond, Va.

Hugh Richmond, of the engineering department of **Hyster Company,** at Portland, Ore., has been promoted to the sales engineering department, eastern industrial truck division, at Danville, Ill.

Instrument Associates, Inc., Arlington, Mass., has been named exclusive manufacturer's representative of **Perkin Engineering Corporation,** in the New England states.

Edward J. Hart, microwave field sales representative in the eastern region for **Radio Corporation of America,** has been appointed manager, RCA microwave equipment sales.

Howard W. Keyser, manager of **Safety Car Heating & Lighting Co's** San Francisco office, has been transferred to the New York office, as manager. **John Van Nort** has been appointed agent, representing the company on the West Coast, with office in San Francisco.

Louis M. Shine has retired as eastern railroad manager of sales, **Standard-Toch Chemical Company.**

T. J. Harris, district manager of **Ohio Brass Company** at Chicago, has been transferred to Dallas, as district manager for the Texas territory. He succeeds **E. C. Thompson,** appointed general factory manager in Mansfield, Ohio. **H. A. Blocki,** of the advertising and sales staff at Mansfield, has been appointed Chicago district manager.

C. A. Thomas, sales engineer of **Stratoflex, Inc.,** has been promoted to general manager of sales, with headquarters remaining in Fort Worth, Tex.

Cummins Engine Company has announced plans for construction of a 73,000-sq-ft addition to its manufacturing plant in Columbus, Ind., and a 17% increase in production rate of its diesels, over and above the 21% increase announced earlier this year.

Park Q. Wray, Jr., general sales manager, **National Motor Bearing Company,** Redwood City, Cal., has been named vice-president, sales.

Norman Caplan has been named manager of mobile radio products for **Bendix Aviation Corporation,** Radio Division, and will direct all mobile and railroad radio activities, including sales, under a new organizational plan. He was formerly assistant director of engineering and research.

Defy Main-Line Traffic vibration with tough, durable Transite Pipe

Ring-Tite's rubber sealing rings are compressed and locked securely into position. This provides lasting tightness and resiliency . . . prevents leakage with its danger of undermining the pipe bedding.

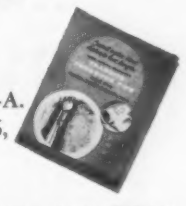
Transite asbestos-cement Pipe is quickly and easily assembled.

. . . and its tight, flexible Ring-Tite Coupling

THE combination of Transite® Pressure Pipe and Ring-Tite® Couplings give lasting durability under rugged conditions, even where shock and vibration are a problem.

Railroads specify Transite for its low installation cost, low operating cost, and low maintenance cost. Quick assembly of sections with Ring-Tite Couplings gets more pipe laid per day. Deflections up to 5° at each joint permit laying pipe around curves without special fittings. Full flow capacity is always maintained by the smooth interior and resistance to corrosion of Transite . . . keeping pumping costs low.

For further information on how to save money with Transite Pressure Pipe and Ring-Tite Couplings, send for Booklet TR160-A. Write to Johns-Manville, Box 60, New York 16, N. Y. In Canada, Port Credit, Ontario.



Johns-Manville TRANSITE PRESSURE PIPE
WITH THE RING-TITE® COUPLING

WHY THE WORKBOOK OF THE RAILWAYS IS THE ADBOOK OF THE RAILWAYS, TOO

Railway Age . . .

. . . 1. is first with vital industry news

. . . 2. carries most working information

. . . 3. carries most buying information

. . . 4. its readers have *elected* to read

NO RAILWAY EXECUTIVE would buy a product or service if he could get the same thing for nothing. Sounds elementary, doesn't it? All right, let's put it another way . . .

No railway executive would buy RAILWAY AGE if he could get the same thing for nothing.

Put yourself in the shoes of a railway executive — depending on a flow of timely, authoritative information. You find these startling differences between RAILWAY AGE and the giveaway second magazine:

- Over 90% of the major articles in RAILWAY AGE are "firsts" or "exclusives."
- RAILWAY AGE carries more than twice as many working information pages as the No. 2 magazine.
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Result — RAILWAY AGE readers spend good money so they can spend good time reading the editorial and advertising pages of RAILWAY AGE.

Now put yourself in the shoes of an advertiser . . .

You find RAILWAY AGE is read by real honest-to-goodness readers who sign renewals and write checks — readers to whom RAILWAY AGE is essential—"The Workbook of the Railways." And not only is RAILWAY AGE the only industry-wide magazine with a paid audited circulation — by contrast the circulation of the second magazine isn't even verified.

Then you see why RAILWAY AGE is "The Adbook of the Railways", too!

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ABP ABC

RAILWAY AGE | Workbook of the Railways

CANADIAN PACIFIC RAILWAY COMPANY

Seventy-fifth Annual Report of the Directors to the Shareholders

(abridged)

Highlights

Year's Results	1955	1954	Increase or *Decrease*
Gross Earnings	$ 448,598,491	$ 422,642,423	$25,956,068
Working Expenses	411,271,773	395,609,497	15,662,276
Net Earnings	37,326,718	27,032,926	10,293,792
Ratio Working Expenses to Gross Earnings	91.7%	93.6%	*1.9%*
Other Income	$ 22,894,567	$ 17,835,319	$ 5,059,248
Interest and Rental Charges	16,188,820	15,041,997	1,146,823
Dividends—Preference Stock	3,136,227	3,091,101	45,126
—Ordinary Stock	20,792,013	20,714,318	77,695
Balance for Modernization and Other Corporate Purposes	20,104,225	6,020,829	14,083,396

Year-end Position	1955	1954	Increase or *Decrease*
Property Investment	$1,761,669,249	$1,694,213,632	$67,455,617
Other Investments	158,439,442	172,555,069	*14,115,627*
Funded Debt	169,651,000	172,793,500	*3,142,500*
Reserves	633,955,713	601,920,444	32,035,269
Working Capital	117,490,662	109,131,467	8,359,195
Traffic			
Tons of Revenue Freight Carried	58,489,144	54,205,877	4,283,267
Revenue Passengers Carried	9,543,843	9,528,589	15,254
Revenue per ton Mile of Freight	1.43c	1.46c	*0.03c*
Revenue per Passenger Mile	2.81c	2.82c	*0.01c*
Employees			
Employees, All Services	86,789	87,072	*283*
Total Payrolls	$ 293,018,422	$ 287,120,929	$ 5,897,493
Average Annual Wage	$ 3,376	$ 3,298	$78

Your Directors have the honour to report the results and developments of the year 1955. It is a matter of particular pride that this is the 75th Annual Report of the operations of your Company.

Net Income amounted to $44 million, which, after providing for dividends of 4% on Preference Stock, and $1.50 per share on Ordinary Stock, left a balance equal to $1.44 per share for modernization and other corporate purposes.

During 1955, there was a continuation of the strong upward movement in Canadian economic activity, and the gross national product increased by 10% to a new high level. The freight service performed by your railway, measured in ton miles, showed an increase of 9%, but did not attain the level of any of the years 1951 to 1953, inclusive. Traffic volume generally was moderately improved, and there were some outstanding increases. However, grain and grain products, which amounted to about 30% of total freight traffic, showed a decrease for the second successive year as export demand remained low.

Gross railway earnings rose $26 million, or 6%. Increasing competition was met in many instances by selected rate reductions and the making of a number of agreed charges.

Net railway earnings increased by $10.3 million over the previous year. Two principal factors contributed towards this improvement. Firstly, despite the rise in traffic volume, the total of maintenance work remained about the same as in 1954. Secondly, the proportion of transportation service performed by diesel power increased sharply and transportation expenses declined in relation to earnings. As a result of the level of maintenance and capital expenditures, including the purchase of additional diesel power, traffic units per man-hour were exceeded only in the peak of the wartime years.

Capital expenditures amounting to $81 million were made during the year in furtherance of the modernization which has been in progress for some years. Of this amount, $18.2 million was for diesel locomotives and facilities required for their operation. The total of your investment in diesel locomotives and facilities amounted to $110 million at the end of the year. It is estimated that through this investment there is being effected a saving in transportation expenses of approximately $18 million per annum, and a reduction in current locomotive repair expense of about $6 million.

Other Income amounted to $22.9 million, an increase of $5.1 million as compared with the previous year. Dividend income from The Consolidated Mining and Smelting Company of Canada, Limited, was higher, and there was an improvement in the results of operation of your ocean steamships.

Land and townsite sales were higher and receipts from petroleum rents, royalties and reservation fees increased moderately. The net addition to Land Surplus account was $9.4 million, an increase of $1.7 million.

The Income, Profit and Loss and Land Surplus Accounts of your Company show the following results for the year ended December 31, 1955:

Income Account

Gross Earnings		$448,598,491
Working Expenses		411,271,773
Net Earnings		$ 37,326,718
Other Income		22,894,567
		$ 60,221,285
Fixed Charges		16,188,820
Net Income		$. 44,032,465
Dividends:		
Preference Stock	$ 3,136,227	
Ordinary Stock	20,792,013	
		23,928,240
Balance transferred to Profit and Loss Account		$ 20,104,225

Profit and Loss Account

Profit and Loss Balance December 31, 1954		$252,145,925
Balance of Income Account for the year ended December 31, 1955	$20,104,225	
Portion of steamship insurance recoveries representing compensation for increased cost of tonnage replacement	543,761	
Excess of considerations received for sales of properties over book values, and miscellaneous items	2,135,941	
		22,783,927
Profit and Loss Balance December 31, 1955, as per Balance Sheet		$314,929,852

Land Surplus Account

Land Surplus December 31, 1954			$ 92,278,857
Add:			
Receipts from Petroleum Rents, Royalties and Reservation Fees	$8,992,713		
Land and Townsite Sales	4,982,469		
Miscellaneous Receipts	825,371		
		$14,800,553	
Deduct:			
Administrative and Other Expenses	$ 702,200		
Taxes (Incl. $4,000,000 income taxes)	4,623,206		
Inventory Value of Lands Sold	89,323		
Miscellaneous ..... Cr.	20,582		
		5,394,147	
			9,406,406
Land Surplus December 31, 1955, as per Balance Sheet			$101,685,263

(Advertisement)

Railway Operations

Net earnings from railway operations amounted to $37.3 million, an increase of $10.3 million as compared wtih 1954. The ratio of net to gross earnings improved from 6.4% to 8.3%. Gratifying as this improvement was, the results for the year represented a return on net railway investment of only 2.92%—a rate very much below an adequate return for your railway enterprise.

Gross earnings, at $449 million, were up $26 million. While the increase was provided mainly by freight traffic, there was improvement in nearly all classes of revenues.

Freight traffic volume increased by 2,054 million revenue ton miles, or 9%. The rise was fairly general, with notable increases occurring in lumber, timber and plywood, crude petroleum, petroleum products, iron and steel, automobiles, trucks and parts, building sand, gravel and crushed stone. Grain and grain products were down 4%, and there was a marked decrease also in agricultural implements and farm tractors.

Passenger traffic volume expressed in revenue passenger miles increased by 4%. There was a decrease during the first five months, but an impressive recovery followed the introduction of new equipment and improved schedules in transcontinental services. The improvement was not confined to the summer season but extended throughout the balance of the year. The average increase over the last seven months was more than 8%.

Express traffic was up slightly from 1954 and there were some increases in rates. Expenses increased less than revenues, and, as a result, the net earnings of your Express Company, carried to railway earnings as compensation for the carriage of express traffic, were higher by 7%.

Working expenses amounted to $411 million, an increase of $15 million. Income taxes accounted for almost $9 million of this increase.

Maintenance expenses were little changed as the amount of maintenance work undertaken was about the same as for the previous year.

Roadway maintenance included the laying of 418 miles of new and relay rail, the installation of 1,970,000 ties and the application of ballast to 328 miles of track. These items of maintenance were less than the averages for the previous five years.

Equipment maintenance included the general repair of 375 steam locomotives, periodic repair of 293 diesel-electric units, the heavy repair of 35,806 freight cars, and the general repair of 752 passenger cars.

Transportation expenses, notwithstanding the increase of 9% in freight traffic volume, rose by only 1%, and the ratio of transportation expenses to gross earnings declined to 38.8% from 40.9% in 1954. Notable improvements were effected in service and operating efficiency. Of the total transportation work done during the year, the proportion performed by diesel power was 45% in freight service, 60% in passenger service and 65% in yard service. While the volume of total transportation service increased by 3.8 billion gross ton miles, train fuel expense decreased by almost $600,000. Freight train speed and gross ton miles per freight train hour reached new high levels, continuing the trend of the past five years.

Other Income

Other Income, after income taxes, amounted to $22.9 million, an increase of $5.1 million.

Ocean and coastal steamship operations resulted in a profit of $330,000 compared with a loss of $2 million in the previous year. A firmer tendency in ocean rates on grain and flour, increased cargo carrying both eastbound and westbound, and reduced expenses were the factors in the improved showing of ocean steamships. The increase in traffic volume occurred despite strikes by stevedores and tugmen at United Kingdom and European ports. North Atlantic passenger earnings were adversely affected by the cancellation of two voyages which resulted from a strike by stewards, but, as an offset to this, earnings from West Indies cruises showed marked improvement over the previous year. Revenues from coastal operations decreased, principally as a result of lower freight earnings, but expenses were reduced in greater proportion. A strike by personnel of the "Princess Helene" caused suspension of your Bay of Fundy service throughout most of the last quarter of the year.

Net earnings of hotels were virtually unchanged. Increased room rates were put into effect at some points in order to offset increased payroll costs.

Net earnings from communication services increased by $700,000. Gross revenues improved as a result of an expansion of leased wire business and a recovery of telegraph message traffic from the decline which occurred in the previous year. Expenses reflected the economies resulting from capital expenditures and did not increase in the same proportion as revenues.

Dividend income was up $3.4 million. Dividends declared by The Consolidated Mining and Smelting Company of Canada, Limited, were at the rate of $1.75 per share out of earnings of $2.01 per share, as compared with $1.35 out of earnings of $1.50 per share in 1954.

Net income from interest, separately operated properties and miscellaneous sources increased by $1.3 million, principally as a result of the fact that the jointly owned Northern Alberta Railways Company realized a net operating profit as compared with a loss in the previous year.

Fixed Charges

Fixed charges, at $16.2 million, were higher by $1.2 million. There were net increases in the charges on both equipment trust and collateral trust obligations,

Net Income and Dividends

Net income after fixed charges, at $44 million, was up $14.2 million. After provisions for dividends on Preference Stock, earnings available for dividends on Ordinary Stock and for reinvestment amounted to $40.9 million. This was equal to $2.94 per share on 13,878,173 shares of Ordinary Stock outstanding at the end of the year, as compared with $1.94 on 13,812,014 shares at the end of 1954.

Dividends were declared on Preference and Ordinary Stock at the same rates as in 1954. Preference Stock dividends amounted to 4%, comprising 2% paid August 2, 1955, and 2% paid February 1, 1956. Ordinary Stock dividends amounted to $1.50 per share, comprising 75 cents paid August 1, 1955, and 75 cents paid February 29, 1956.

Land Accounts

The net addition to Land Surplus Account amounted to $9.4 million after income taxes of $4.0 million.

Gross receipts from petroleum rents, royalties and reservation fees, at $9.0 million, were up $553,000. Reservation fees provided most of the increase. Although royalties were received on 14.9 million barrels of crude oil from 718 wells, compared with 13.6 million barrels from 697 wells in 1954, income from this source was little higher in consequence of reductions which occurred in well-head price for crude oil.

At the close of the year, 1.3 million acres in respect of which your Company holds petroleum rights were under lease, and 8.5 million acres were under reservation for exploration.

Proceeds from sales of land amounted to $5.0 million, an increase of $1.4 million. Sales included 12,657 acres of farm lands and 30,293 acres of timber lands. Contracts involving 5,568 acres of land sold in prior years were cancelled.

Balance Sheet

Total assets at the end of the year amounted to $2,134 million, an increase of $80 million.

The increase in property investment after retirements was $67 million. Gross expenditures on capital account amounted to $81 million of which $10 million was for railway road property, $51 million for rolling stock, and $11 million for ocean steamships.

(Advertisement)

At the end of the year, the unexpended balance of the capital appropriations approved for your new ocean steamships was $13 million. There was an increase of $8 million in net working capital.

Finance

The balance of $10,546,000 of Equipment Trust Certificates, Series "N", referred to in the 1954 Annual Report, was issued in 1955. The principal amount of this series totaled $17.2 million.

Serial equipment obligations amounting to $12,018,000 were discharged; $1,609,500 Convertible Twenty Year 3⅛% Collateral Trust Bonds, $51,000 Convertible Fifteen Year 3½% Collateral Trust Bonds, and $10,000 Convertible Seventeen Year 4% Collateral Trust Bonds were converted into 66,159 shares of Ordinary Capital Stock.

The foregoing transactions resulted in a net decrease of $3,142,500 in funded debt, a net decrease of $2,004,600 in the amounts of Consolidated Debenture Stock pledged as collateral, and an increase of $1,653,975 in the amount of Ordinary Capital Stock outstanding.

Pensions

Pension expense amounted to $18.1 million. This comprised the portion of curent pensions paid by your Company, contributions of $5.6 million to the Pension Trust Fund, and levies in respect of employees covered by the United States Railroad Retirement Act.

Wage Negotiations

On November 2, unions representing the non-operating employees served a joint request for revision of present agreements including an 18% increase in wage rates, payment of 8¢ per hour to provide for group life insurance with medical and hospital benefits, and pay for three additional statutory holidays. Negotiations failed to bring about a settlement, and the matter has been referred to a Conciliation Board. Approximately 57,000 of your employees are affected by this dispute.

Agreements were reached with running trades employees, comprising engineers, firemen, conductors, trainmen and yardmen, effective April 1, 1955, granting increased vacations with pay for those employees with three to five years' service and for those with fifteen and more years' service. Additional demands have been made for 1956.

An agreement was concluded covering the unlicensed deck and engineroom employees of the British Columbia Coastal Steamships, providing for an increase in wage rates of $14 per month, effective June 1, 1955, and a further increase of $9.75 per month from 1, 1956. This settlement corresponds with those made by other steamship lines in the area.

The unlicensed personnel of the S.S. "Princess Helene" operating on the Bay of Fundy requested increases in wage rates on the scale agreed upon for the British Columbia Coastal Steamship Service. As conditions and wages on the East Coast are not considered comparable with those on the West Coast, this request was declined and an offer was made of a wage adjustment based on the change in the cost of living and in the rates of other steamship services in the East. A Conciliation Board which had considered the matter did not recommend any increase in wage rates. Notwithstanding the offer made by your Company, the employees went on strike and your Bay of Fundy service was interrupted from September 30 to December 19. On the latter date the employees returned to duty and negotiations were to be resumed.

Agreements were reached with employees of your hotels, excepting the Royal York, providing for a wage increase of 2% from June 1, 1955, and a further 1% from June 1, 1956. The agreement also provided for increased vacation benefits similar to those awarded non-operating railway employees in 1954. In the case of the Chateau Fontenac, provision was made, in addition, for the establishment of a 40-hour week effective June 1, 1956. Negotiations were continued with representatives of employees of the Royal York Hotel regarding a request for an increase of 18% in wage rates and other benefits.

Negotiations were under way concerning revision of the working agreements respecting pilots and flight attendants employed by your Air Lines.

Steamships

Construction was completed of your new passenger-cargo liner "Empress of Britain" which, after undergoing sea trials, will enter into regular North Atlantic service in the spring of 1956 as the flagship of your ocean fleet. Construction of your second new liner, to be named "Empress of England", proceeded during the year. This vessel is to join your North Atlantic fleet in the spring of 1957. In anticipation of the completion of the "Empress of Britain", the "Empress of Australia" was withdrawn from service at the end of the year and sold in February. This ship was acquired early in 1953 in temporary replacement of the "Empress of Canada" which had been destroyed by fire.

Your new 5,554 ton motorship "Princess of Vancouver" entered the British Columbia Coastal services in June. The "Princess of Vancouver" has accommodation for 800 passengers and is designed also to carry 28 railway freight cars or 115 automobiles and trucks. Operation of this vessel from specially constructed slipways has made possible more frequent service between Vancouver and Nanaimo, and released two barges for service between other points. Your Company and the Canadian National agreed to undertake joint operation, commencing in March, of a service between Vancouver and Ketchikan, Alaska, and intermediate points including Prince Rupert. Your vessel "Princess Norah", which formerly operated between Vancouver and Prince Rupert, was placed in this service and was renamed "Queen of the North". Your 1,243 ton "Motor Princess" was sold in January, 1955.

Air Lines

Your Air Lines had a net profit of $275,000. In the previous year there had been a net profit of $969,000, which included $593,000 from the sale of aircraft.

There was an increase of 45% in revenues from domestic operations, principally as a result of participation in the cargo charter airlift, which commenced in February, to supply and service the construction of northern radar installations. Eight Curtiss Commando freighter aircraft were purchased for this purpose. Other developments were an increase in service from three times weekly to six times weekly between Winnipeg and Churchill; the introduction of all-cargo services between Vancouver and Whitehorse and between Edmonton and Yellowknife; the replacement of Norseman aircraft with modern DeHavilland Otter aircraft on the extreme northern route from Norman Wells to Aklavik; the inauguration of a direct daily service between Vancouver and Terrace, using pressurized Convair aircraft; and the use of this type of aircraft also on routes of Edmonton. Substantial reductions in passenger fares became effective on the Mackenzie district at the beginning of June.

International revenues decreased 9% as a result of the expiration at the end of March of the agreement with the Government of Canada in respect of the Korean military airlift. Upon termination of this service, the regular schedule between Hong Kong and Vancouver was increased from one flight to two flights weekly. An important extension of your international air routes was effected with the inauguration in June of the Vancouver-Amsterdam trans-Arctic service. This extension, which has brought the west coast of Canada within 19 hours' flying time of Europe, provides a direct connection with your other international routes out of Vancouver. Traffic volume over the new route was at a high percentage of capacity, and fully justified expectations. Another major development was the addition of the Toronto-Mexico City service in November. This route, which connects Eastern Canada with your international service between Vancouver and South America, was obtained frfom Trans-Canada Air Lines in exchange for certain routes in Quebec which were distant from your maintenance facilities at Vancouver.

On order at the year end were eight DC-6B aircraft for delivery

(Advertisement)

commencing in 1956, and three Bristol Britannia turboprop aircraft for delivery in 1957.

United States Subsidiaries

Income received from your holdings of General Mortgage Income Bonds and Common Stock of the Minneapolis, St. Paul and Sault Ste. Marie Railroad Company amounted to $488,000. Of this amount, $132,000 represented interest and $356,000 dividends. The net income of that Company in 1955, after provision for fixed and contingent charges, was $2.4 million, an increase of $800,000 as compared with 1954.

Income amounting to $382,000 was received in respect of your holdings of First Mortgage Bonds and Common Stock of the Duluth, South Shore and Atlantic Railroad Company. Interest amounted to $172,000 and dividends to $210,000. The net income of that Company after provision for fixed and contingent charges amounted to $422,000. Net income in the previous year had not been sufficient to meet contingent charges in full.

Income amounting to $693,000 was received in respect of your holdings of First Mortgage Bonds, General Mortgage Income Bonds and Common Stock of the Wisconsin Central Railroad Company. This amount comprised $523,000 interest and a first dividend of $170,000. The net income of the Wisconsin Central after provision for fixed and contingent charges amounted to $1.6 million, compared with $236,000 in the previous year.

Rates

The Royal Commission appointed in 1954 to enquire into the application and effects of agreed charges made its report in February 1955. The Commission upheld the contention of the railways, as referred to in the last Annual Report, that agreed charges should not be subject to the "one and one-third rule". It also recommended changes in the Transport Act designed to reduce the restrictions which apply against the railways in the making of agreed charges. Important among the changes proposed were reduction from 30 days to 20 days in the waiting period required before an agreed charge can become effective, and the elimination of the requirement that agreements must have the prior approval of the Board. The recommendations of the Commission were generally adopted, and the Transport Act was amended accordingly in July.

Forty-seven additional agreed charges were put into effect in 1955, more than twice the number in the previous year, and a number of others were in the process of negotiation. Among the new agreements were those involving the shipment of automobiles to Western Canada and these have resulted in a marked improvement in the amount of that traffic carried by your Company.

The reductions in competitive rates on less-than-carload merchandise in vanload quantities carried in truck trailers-on-flat-cars, which were put into effect between Montreal and Toronto during 1954, were extended to Hamilton and London in September, and to Windsor in December. A number of reductions in rates on individual commodities were also put into effect during the year to meet competition.

In compliance with the order of the Board of Transport Commissioners, revised equalized class rates, which are rates applying on general classes of traffic, were made effective in March 1955. Gross earnings for the year were adversely affected by these changes and it is estimated that they will result in a reduction in freight revenues amounting to more than $2.5 million annually.

The Board of Transport Commissioners proceeded with studies respecting the equalization of commodity rates. Preliminary hearings were held in Ottawa in June and November.

Services

The improvement and modernization of your railway services continued. Ninety-seven new diesel units were acquired, comprising road switchers for freight and passenger service and yard switchers for use at terminals. The first stage of a diesel maintenance shop at Montreal was completed before the end of the year.

New rolling stock placed in service also included 1,640 freight train cars, of which 1,000 were box cars, and 92 stainless-steel passenger train units, of which 9 were rail diesel cars. After retirements there were net reductions in the inventories of both freight and passenger train cars. The average carrying capacity of freight cars in service continued to increase.

Your new scenic-dome stainless-steel streamliner, "The Canadian", which entered transcontinental service in the spring of the year, introduced to this country the finest and most modern equipment in rail passenger service, and reduced by as much as sixteen hours the time formerly required to travel across Canada. "The Canadian" has received widespread public acclaim, and available space was sold practically to capacity throughout the summer months. The service of low-priced meals in the Skyline coffee shop coaches proved to be an attractive feature of the new train.

Stainless-steel units were also in use in your transcontinental train "The Dominion", in "The Atlantic Limited", and in dining car services between Montreal and Quebec. Diesel power was assigned to "The Atlantic Limited", and the scheduled time between Montreal and Saint John was reduced by two hours.

Studies continued for the purpose of further improvement in passenger train services. As a result, seven new "Dayliner" services were commenced, increasing to 2,000 route miles the distance over which these trains were in operation, and to 16 the number of rail diesel cars in service. These cars are highly popular and very satisfactory economies have resulted from their use. Twelve additional units have been ordered for delivery in 1956.

During the year, 39 passenger trains were discontinued as being no longer justified by the level of traffic, and a further twelve trains were operated at reduced frequency. A saving in operations at a rate of 865,000 train miles per year was thus effected. Over the past five years, 119 trains have been discontinued and 45 have been operated at reduced frequency, resulting in a decrease amounting to 2.4 million train miles per year.

Construction of 53 miles of branch lines, to serve new mining and industrial areas, was completed during the year. These comprised a forty mile line between Struthers and Manitouwadge in Ontario, a nine mile line between Mitford and Jumping Pound in Alberta, and a four mile line running north from Cheviot in Saskatchewan. Work was under way on a three mile extension of the line which was built between Havelock and Nephton, Ontario, in 1954.

To improve the safety and efficiency of your railway operations, 50 miles of automatic block signals were installed during 1955, bringing to 3,039 the total mileage so equipped.

New manufacturing, warehousing and distributing businesses which located on or adjacent to the lines of your railway during the year numbered 1,193. Of this total, 180 required industrial trackage, and a total of 36 miles of sidings was constructed to serve them.

During the year, your Express Company took over from the railway the terminal handling at Vancouver, Seattle and all points on Vancouver Island of traffic moving by your coastal steamships, and also assumed direction of the operations of your Vancouver Island trucking subsidiary, Island Freight Service Limited. Economies have already resulted, and further savings are anticipated.

The television network service which your Company operates as a joint communications undertaking with Canadian National was extended to include Windsor and Quebec City, and contracts were entered into for further extensions to Sherbrooke, Trois Rivieres, Jonquiere and Rimouski in Quebec, and to Wingham in Ontario.

Integrated Data Processing

Over the years your Company has been in the forefront in the use of business machines as an aid in handling clerical tasks. Evolving from this, a new development of major significance is now taking place with the adoption of integrated data processing across the system. To gain the benefits of automation in the mass handling of paper work, information on many phases of the

(Advertisement)

operations of your Company will be recorded automatically at the source and transmitted over your communications network to a central processing location. By use of one of the most advanced electronic data processing machine installations, it will be possible to supply information promptly to all levels of management, virtually without manual intervention.

The computer installation of your Company will be the first of its kind in Canada. In addition to producing worthwhile economies, it is expected to contribute to more efficient operation. In anticipation of the delivery of a large-capacity computer early in 1957, new data processing methods are being instituted, and new types of ancillary equipment are being put into use as quickly as deliveries can be obtained.

Capital Appropriations

In anticipation of your confirmation, capital appropriations amounting to $12.6 million, in addition to those approved at the last Annual Meeting, were authorized by your Directors during the year. These included $6.4 million for 1,000 50-ton box cars, $1 million for 5 rail diesel cars and $1.5 million for the extension of microwave relay systems for television network services.

Your approval will be requested also for capital appropriations for the year 1956 amounting to $94 million.

The appropriation for locomotives is for 115 diesel-electric units. The appropriations for ties, rails, other track material and ballast include provision of $19.6 million for replacement of elements heretofore charged as renewals to operating expenses but henceforth to be capitalized and made subject to depreciation accounting. This change is required by the Uniform Classification of Accounts prescribed by the Board of Transport Commissioners which became effective January 1, 1956.

Patrons, Officers and Employees

Your Directors sincerely appreciate the many tributes paid to the high standards of service maintained by your Company and the confidence and satisfaction shown by shippers and the traveling public. They wish to acknowledge the contribution made toward the maintenance of those standards by the loyalty and cooperation of officers and employees.

For the Directors,

N. R. Crump,
President.

Montreal, March 12, 1956.

Canadian Pacific Railway Company • General Balance Sheet, December 31, 1955

ASSETS

Property Investment:		
Railway, Rolling Stock and Inland Steamships	$1,286,661,505	
Improvements on Leased Property	142,494,895	
Stocks and Bonds—Leased Railway Companies	133,674,031	
Ocean and Coastal Steamships	83,676,788	
Hotel, Communication and Miscellaneous Properties	115,162,030	
		$1,761,669,249
Other Investments:		
Stocks and Bonds—Controlled Companies	$ 83,605,164	
Miscellaneous Investments	33,869,981	
Advances to Controlled and Other Companies	9,798,699	
Mortgages Collectible and Advances to Settlers	1,120,675	
Deferred Payments on Lands and Townsites	4,350,096	
Unsold Lands and Other Properties	8,055,859	
Insurance Fund	13,188,540	
Steamship Replacement Fund	4,450,428	
		158,439,442
Current Assets:		
Cash	$ 43,695,488	
Government of Canada Securities	69,790,839	
United Kingdom Treasury Bills	1,663,270	
Special Deposits	5,167,771	
Agents' and Conductors' Balances	19,664,594	
Miscellaneous Accounts Receivable	25,934,344	
Material and Supplies	41,369,639	
		207,285,945
Unadjusted Debits:		
Insurance Prepaid	$ 119,023	
Unamortized Discount on Bonds	3,999,535	
Other Unadjusted Debits	2,932,306	
		7,050,864
		$2,134,445,500

LIABILITIES

Capital Stock:		
Ordinary Stock	$346,954,325	
Preference Stock—4% Non-cumulative	137,256,921	
		$484,211,246
Perpetual 4% Consolidated Debenture Stock	$417,916,788	
Less: Pledged as collateral to bonds	125,367,900	
		292,548,888
Funded Debt		169,651,000
Current Liabilities:		
Pay Rolls	$ 9,345,556	
Audited Vouchers	14,781,212	
Net Traffic Balances	2,893,897	
Miscellaneous Accounts Payable	14,756,303	
Accrued Fixed Charges	1,270,792	
Dividends Payable	12,437,976	
Taxes Accrued	16,797,320	
Other Current Liabilities	17,512,227	
		89,795,283
Deferred Liabilities		4,349,588
Reserves and Unadjusted Credits:		
Depreciation Reserves	$604,755,736	
Investment Reserves	643,018	
Insurance Reserve	13,188,540	
Contingent Reserves	4,118,419	
Tax Equalization Reserve	11,250,000	
Unadjusted Credits	6,105,368	
		640,061,081
Premium on Capital and Debenture Stock		37,213,299
Land Surplus		101,685,263
Profit and Loss Balance		314,929,852
		$2,134,445,500

S. J. W. LIDDY,
Comptroller

TO THE SHAREHOLDERS,
CANADIAN PACIFIC RAILWAY COMPANY:

We have examined the above General Balance Sheet of the Canadian Pacific Railway Company as at December 31, 1955, and the related financial statements, and have obtained all the information and explanations we have required. Our examination included such tests of accounting records and other supporting evidence and such other procedures as we considered necessary in the circumstances.

In our opinion the General Balance Sheet and related financal statements are properly drawn up so as to present fairly the financial position of the Canadian Pacific Railway Company at December 31, 1955, and the results of its operations for the year then ended, according to the best of our information and the explanations given to us and as shown by the books of the Company.

Montreal, March 9, 1956

PRICE WATERHOUSE & CO.
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Driving to job at speeds to 19 mph saves delays, gets more work done. Tournatractor follows the track . . . or travels by highway . . . or alongside on right-of-way . . . takes shortest route. Big tires do not damage tracks, ties, switches.

Coal, cinders, ballast, or stockpile of other materials are specialties of high-speed Tournatractor. Big tires compact coal without grinding it to fines . . . reduce danger of spontaneous combustion.

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Railway Officers

BOSTON & MAINE—MAINE CENTRAL.—George H. Hill, assistant to executive vice-president—public relations of the B&M and publicity and advertising manager of the MC, who has been promoted to assistant to president—public relations of both roads.

BURLINGTON. — V. A. Leengran, assistant freight claim agent at Chicago, has been appointed general freight claim agent there, succeeding **Fred A. Kilker,** retired. **L. W. Seehausen,** resident freight claim adjuster at Kansas City, Mo.,

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has been named freight claim agent at Chicago, to replace Mr. Leengran.

Arthur R. MacDonald, Jr., road foreman at Chicago, has been appointed trainmaster, Aurora and LaCrosse division at Galesburg, Ill., succeeding **J. P. Nelson,** promoted.

HUDSON & MANHATTAN.—Merrill K. Stewart, assistant supervisor train movement, Chesapeake region of the Pennsylvania, at Baltimore, has been appointed assistant superintendent transportation. **James C. Warren,** who was district engineer, Buckeye region, Pennsylvania, at Columbus, Ohio, has been appointed associate general superintendent. **John T. Fitzgerald,** formerly with a real estate management company, has been made director of real estate, and **A. D. Moore,** previously with the Philadelphia Transportation Company, has been appointed superintendent signal system and way.

ILLINOIS CENTRAL.—Edward H. Buelow, general superintendent of transportation at Chicago, has been appointed general manager there, succeeding **Otto H. Zimmerman,** newly named operating vice-president (Railway Age, Mar. 26, p. 39). **Wayne A. Johnston, Jr.,** superintendent, Illinois division at Champaign, Ill., succeeds Mr. Buelow, and in turn has been replaced by **F. Kenneth Stanford,** transferred from

Edward H. Buelow

the Mississippi division at Jackson, Tenn. Mr. Stanford's successor is **Richard K. Osterdock,** acting superintendent, Vicksburg division, at Vicksburg, Miss. **Phillip H. Galloway,** assistant superintendent of freight service at Markham Yard, Chicago, has been appointed superintendent of freight service at that point, replacing **Carl R. Hussey,** who has become superintendent of transportation at Chicago.

JERSEY CENTRAL.—Thomas F. Finnerty, assistant auditor revenues, has been appointed auditor revenues, succeeding **Daniel F. Borell,** retired. **Clarence E. Anson,** chief clerk, car accountant's office, has been

Santa Fe

road crews move more dirt on rubber

To clean out blow-sand from the right-of-way near a highway overpass 5 miles west of Los Lunas, N.M., the Santa Fe Railroad put a D Tournapull to work.

The rubber-tired "D" was push-loaded by a crawler-tractor. Despite the hard-to-load loose sand and poor footing, the D Tournapull averaged 21 trips per hr. over the 1000′ cycle.

Tournapull is easy to operate in either sand or hardpan. It is highly maneuverable, crosses tracks, travels on roadbed easily. Short turning radius allows the machine to work in tight places.

The "D" loaded in 75 ft., hauled 650 ft., spread on the run in 75 ft., returned via shortcut of 350 feet. Average load was 5 yds. bank measure. Cycle time, 2 minutes, 40 seconds. Production: 105 yds. per 55-minute hour.

Under good conditions the "D" handled 1250 yds. in 8 hrs.

Sand no menace to bearings

In spite of extensive operation in sand, no wheel-bearing repair or replacement has been needed on any of the D Tournapulls currently operating for the Santa Fe. The "D's" have needed practically no maintenance except for regular lubrication since purchase.

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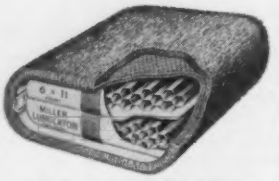

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CLEVELAND: Hotel Cleveland

promoted to car accountant, succeeding **Holmes H. Hallarin,** retired. Headquarters of both are in Jersey City, N. J.

LEHIGH & HUDSON RIVER.—Robert I. Huyler, recently elected president to succeed the late Stanley F. Mackay (Railway Age, Mar. 19), was born in Demarest, N. J., March 14, 1890. His entire railroad service

Robert I. Huyler

has been with the L&HR, starting as a clerk in 1905. In 1943 he became secretary and treasurer, and in 1953, also vice-president. He was made a director of the company in 1950.

MILWAUKEE.—Rudolph N. Edman, auditor of equipment accounts at Chicago, has been appointed chief statistician there, succeeding **A. J. Wallander,** retired. **David B. Ramsay,** assistant auditor of equipment accounts, replaces M. Edman.

P. H. Geelhardt has been appointed division engineer, Trans-Missouri division, at Miles City, Mont., succeeding **H. E. Hurst,** transferred to the LaCrosse and River division at LaCrosse, Wis., to replace **I. C. Brewer,** assigned to other duties.

MISSOURI - KANSAS - TEXAS.—C. A. Birge, Jr., has been named superintendent of rules-safety at Dallas, succeeding **B. A. McDonald,** who retired March 31.

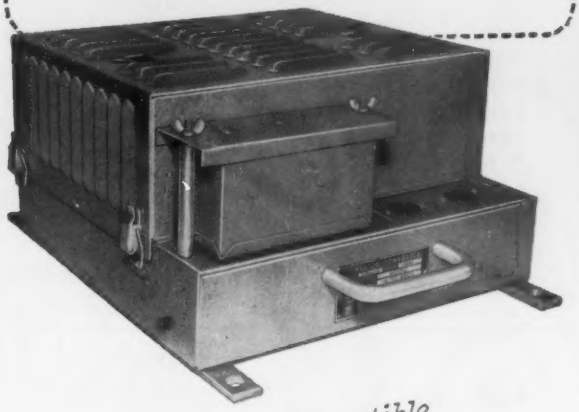
OBITUARY

Walter E. Barrett, superintendent, Terminal division, **Boston & Maine,** at Boston, died in his office March 17.

David W. Fry, 65, principal assistant engineer of the **Baltimore & Ohio,** died recently in Bon Secours Hospital, Baltimore, after a short illness.

John Halpin, 94, retired superintendent of the freight claim department of the **Chicago & Eastern Illinois,** died March 29 at Chicago.

Another C-D first



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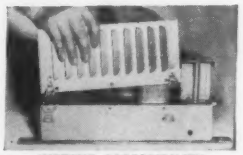
CONVERSION KIT

Consists of Standby Vibrator and automatic Switch. Can be purchased whenever you're ready for dual vibrator service.



INSTANT ACCESSIBILITY

Trunk hasps afford quick access for conversion. Either RACK or BULKHEAD mounting, as ordered.

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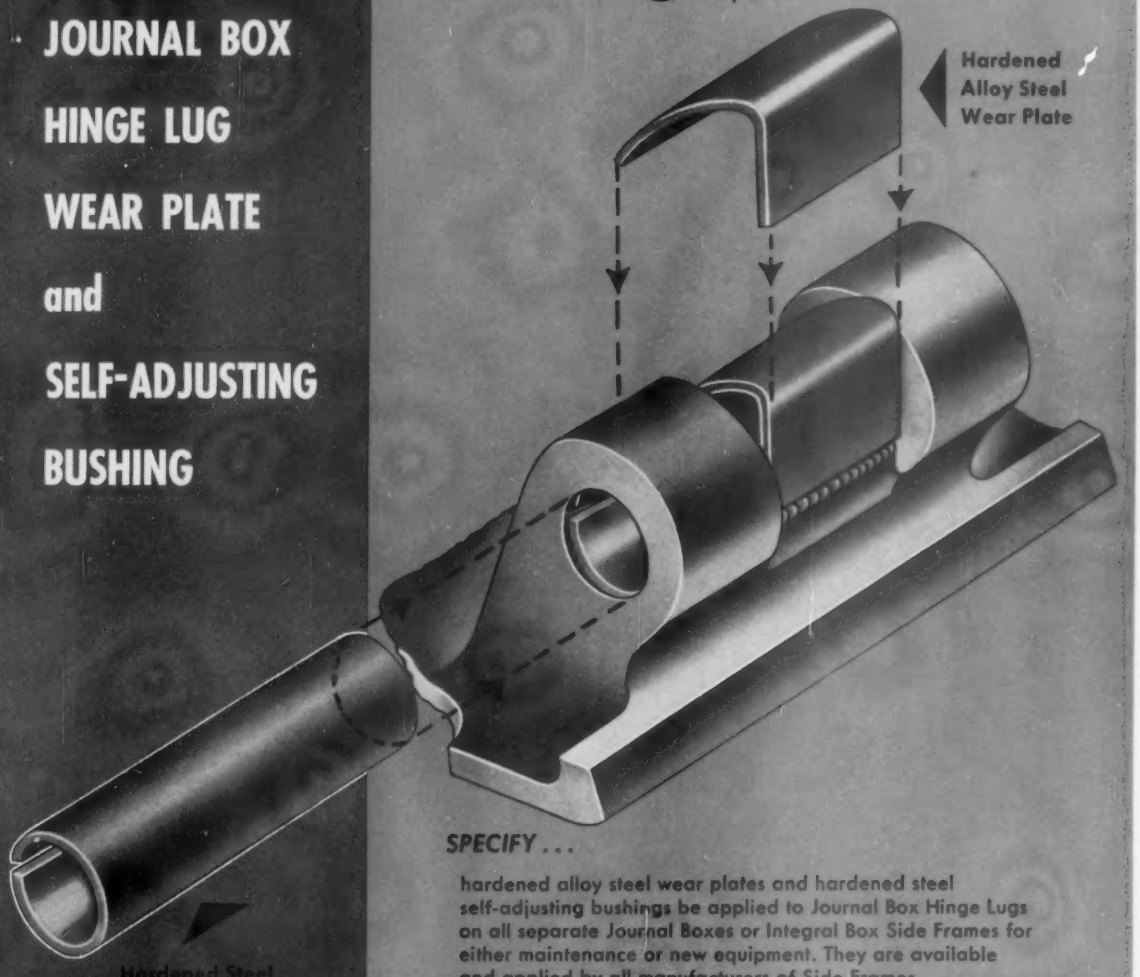

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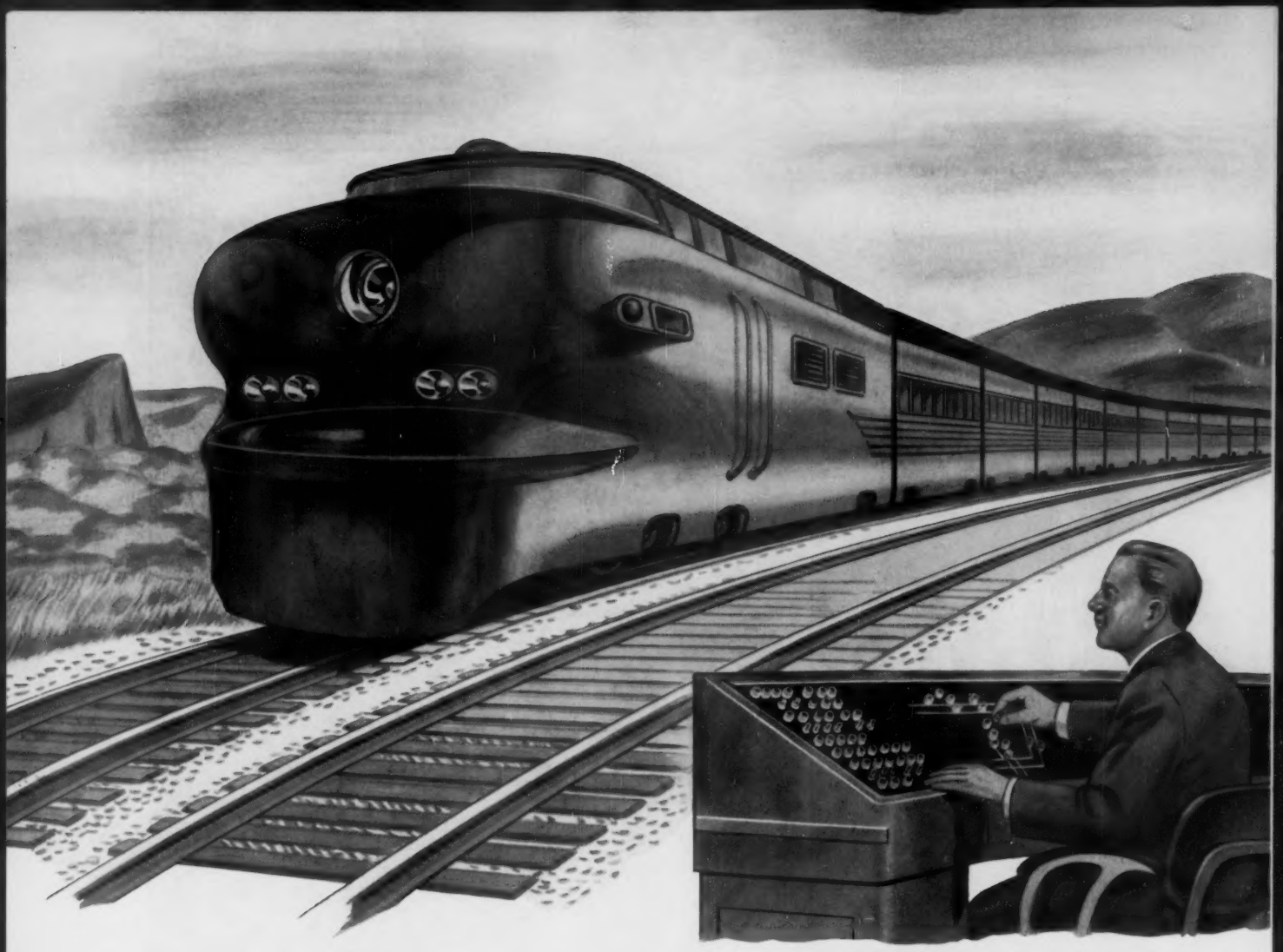

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